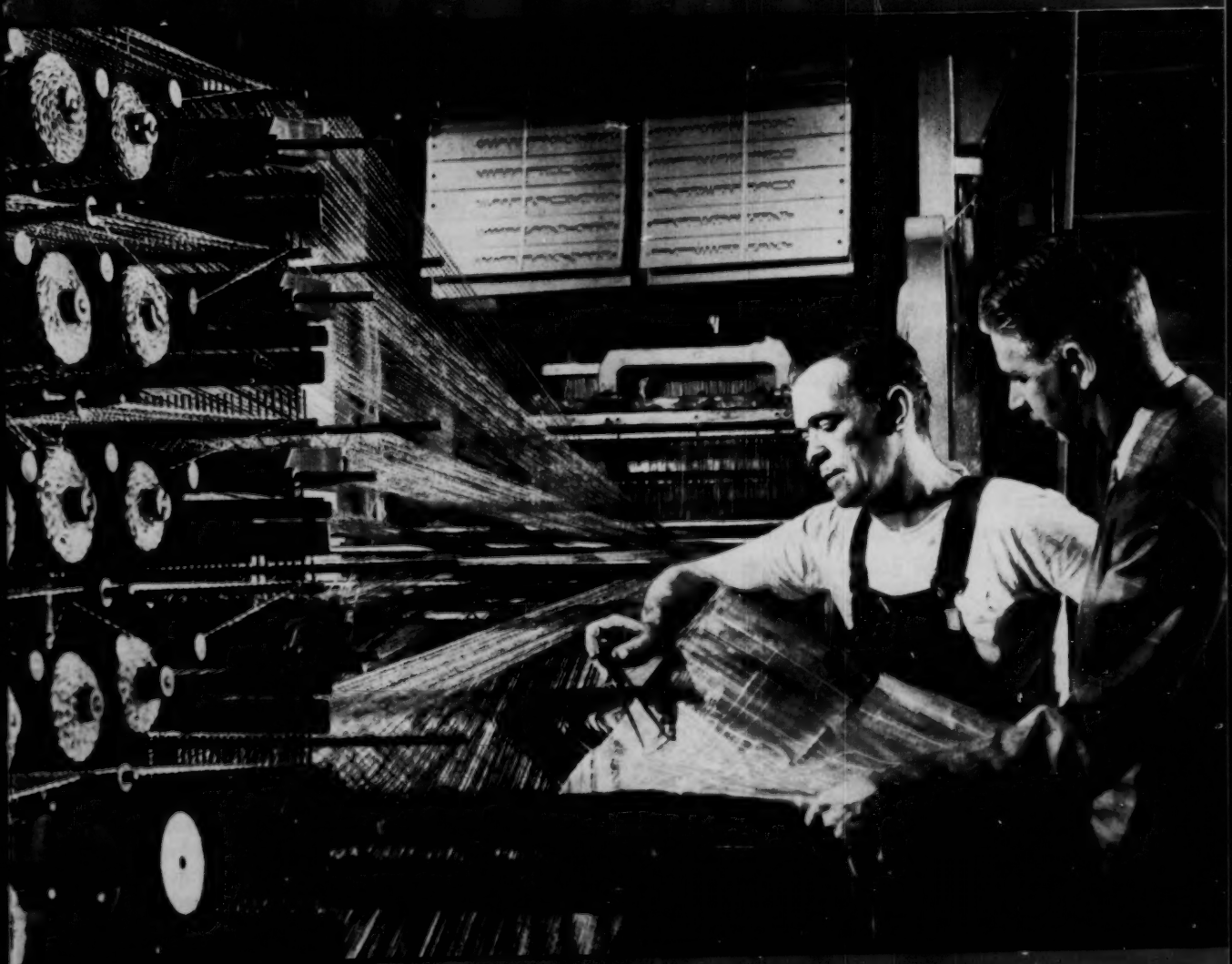
THE MAGAZINE OF

Standards



For a Good Safety Record in the Textile Industry (page 198)

JULY 1957
In Two Parts—Part 1

THE MAGAZINE OF
Standards

IN TWO PARTS

July, 1957 Volume 28, No. 7

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MARGINAL NOTES

The Price List of American Standards —

Part 2 of this issue is a cumulative supplement that brings your price list of American Standards up to date. This is a supplement to the list you received as Part 2 of last year's May issue of THE MAGAZINE OF STANDARDS (May 1956). The next Price List and Index will be published at the beginning of 1958.

Note that the standards listed in this supplement are classified according to subjects. The supplement includes all changes in price as well as new and revised standards issued since May 1956.

When sending an order for American Standards be sure to include your check to cover your order. ASA makes a service charge of 50 cents on all orders for which an invoice must be written.

The Eighth National Conference on Standards —

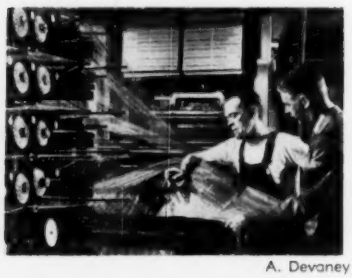
The program for the Eighth National Conference on Standards promises to be unusually interesting and informative. Among the speakers will be such outstanding executives as Curt Biggs, Director of the Standards Laboratory, Sandia Corporation; A. C. Blackman, chief, Division of Industrial Safety, State of California; William E. Butts, General Metals Corporation, San Francisco, and president of the San Francisco Post, American Ordnance Association; H. W. Christensen, Director of Purchases, Columbia-Geneva Steel Division, U. S. Steel Corporation, San Francisco; Colonel William Darmody, Sheffield Corporation, Dayton, Ohio; John Dunn, Staff Director, Office of Standardization, Department of Defense, Washington, D. C.; G. J. Grieve, Pacific Paint & Varnish Company, San Francisco; Myron B. Hawkins, U. S. Radiological Defense Laboratory, Corona, California; Dr D. E. Hull, California Research Corporation of the Standard Oil Company of California; Axel Jensen, Engineering Vice-President, Society of Motion Picture and Television Engineers; John Juli, Consolidated West-

ern Steel Division, U. S. Steel Corporation, Los Angeles, California; W. M. Keller, Assistant Vice-President, Operations and Maintenance Department, Executive Vice-Chairman and Director of Research, Mechanical Division, Association of American Railroads, Chicago; M. C. Nystrom, General Purchasing Agent of the Southern Pacific Company, San Francisco; and Robert J. Shank, Executive Vice-President, Hughes Aircraft Company, Culver City, California. These are only a few of the many interesting speakers who will present their ideas and suggestions, and share their experiences with you during the three-day Conference.

The Conference is to be at the St Francis Hotel, San Francisco, November 13, 14, and 15.

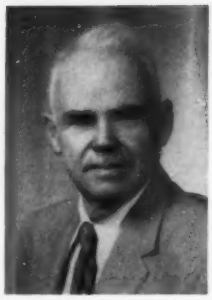
A preliminary announcement of the program is now in the mails. You are asked to plan your trip *now*—send in your advance registration *now*.

The Front Cover —



A. Devaney

The new American Standard Textile Safety Code may well rate as one of the important developments in the textile industry, according to Frank W. Marcaccio (page 198). In his article Mr Marcaccio tells why he believes the standard will be used and will rank as an important contribution to the entire industry. As Mr Marcaccio points out, the standard provides minimum safety requirements for all operations in a textile plant with the exception of those processes used exclusively in the manufacture of synthetic fibers. In the picture above engineers are checking a new vertical creel of a Jacquard loom in the manufacturing-engineering department of the Bigelow-Sanford Carpet Company.



This Month's Standards Personality

JOHN A. DICKINSON is well known for his long and outstanding service in development of American Standards. Mr Dickinson, Chief of the Codes and Specifications Section, Building Technology Division, National Bureau of Standards, has been active in the work on American Standard safety codes since the day it was first decided that such codes should be developed. This was January 15, 1919, the day Mr Dickinson started working for the National Bureau of Standards. At this meeting it was decided that a national clearinghouse for safety standards was needed and that the services of the recently organized American Engineering Standards Committee (now the American Standards Association) should be used.

Mr Dickinson was a member, at first an alternate member, of the Safety Code Correlating Committee from the time it first met in 1920. This commitee, organized by AESC to head the safety work, is now ASA's Safety Standards Board. At present, Mr Dickinson is also a member of 27 sectional committees, all of which are working on some aspect of safety or building standards. He is chairman of two—the Safety Code for Manlifts, A90, and National Electrical Safety Code, C2.

Mr Dickinson is probably best known, however, for his work on the elevator safety code. For this widely used safety standard he has done a great deal of basic research, and is also credited with much of the writing. He was elected secretary of the committee in 1922 and served continuously until 1955 in that office. In 1925 he was chosen by the sponsors as Research Fellow at the National Bureau of Standards to make a study of elevator oil buffers and under-car safeties. The results of the buffer work were incorporated in the 1931 edition of the American Standard and have not been changed since. The work on under-car safeties was interrupted by the bank holiday in 1932 and has never been resumed.

Believing that standards, particularly safety standards, have no value if they are not used, Mr Dickinson has served as a member of many state and municipal advisory committees. Through this service he has worked to bring State codes into substantial agreement with American Standards even though the form and arrangement may be quite different.

Many other services on American Standards could be cited—not least of them being his preparation of the draft that resulted in completion of an American Standard for manlifts in a record one year and five days after the organization meeting of the committee.

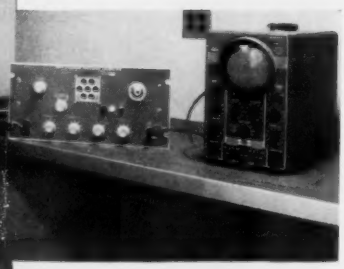
Mr Dickinson's outstanding work was recognized this year by his alma mater, the Stevens Institute of Technology, with award of the honorary degree of Mechanical Engineer. The citation reads in part as follows:

"He has often represented the Department of Commerce and the Bureau of Standards in the diverse fields represented by mechanics, electrical engineering, and chemistry in his work on the Elevator Code, National Electrical Safety Code, Regulations for Dangerous Cargo for Vessels, and the Committee on the Texas City Disaster. He is a charter member of the American Society of Safety Engineers and a member of other scientific societies.

"He exemplifies the claim of the Institute that its graduates are equipped to serve in all fields of engineering."

IT&T . . . . . DEDICATES

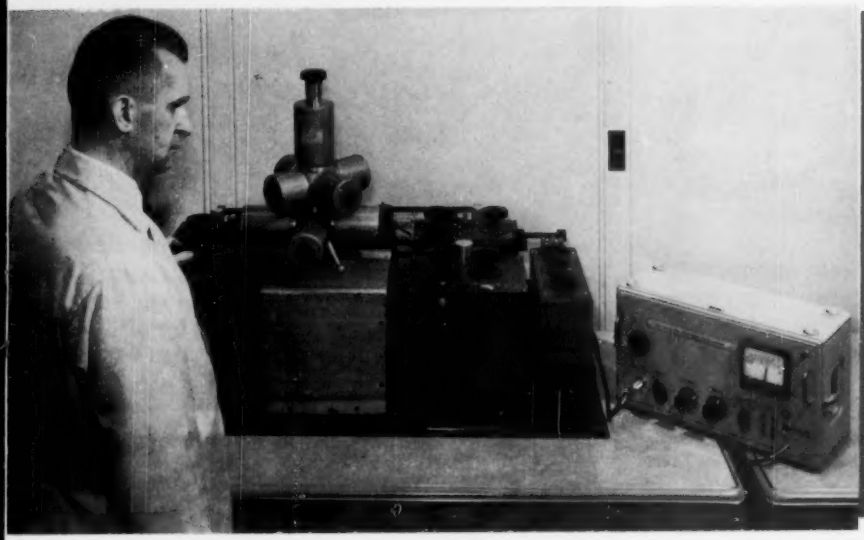
The Electrical Section of the IT&T Standards Laboratory where a wide range of highly precise measurements can be made.



A frequency measuring system *(left) is checked periodically against transmissions of radio station WWV maintained by the National Bureau of Standards for transmitting standard frequencies on a round-the-clock basis. Frequencies are measured between 30 cycles and 600 megacycles with an error of only one part in ten million.*

Here an up-die ammeter is being calibrated to an accuracy of .02 percent. Instruments being used are a light galvanometer, potentiometer, volt box, and standard voltage cell (visible at rear of potentiometer).

STANDARDS LABORATORY



Capacitors used in calibrating this capacitance-conductance bridge are certified by the National Bureau of Standards

RECENTLY the International Telephone and Telegraph Corporation decided that more facilities were needed where users of highly precise measuring equipment might have their equipment tested and certified. As a result, it has built the IT&T Standards Laboratory. This laboratory, dedicated on June 11, is now ready to serve not only the IT&T system companies throughout the world but also private companies, universities, scientific foundations, and government agencies. Located within the plant of IT&T's Federal Telephone and Radio division at Clifton, N. J., the Standards Laboratory consists of both a mechanical and an electrical section. Both are equipped with the latest instruments and standards for checking the master measuring devices to which industry's highly precise tools and gages are compared.

"The opening of the laboratory is a service to industry and the entire country," Dr A. V. Astin, Director of the National Bureau of Standards, said at the dedication ceremonies. It supplements and extends the service of the Bureau whose function is to maintain and to carry forward research in the field of measurement and standards. The Bureau cannot now meet all of the many calls made on it by industry for checking and calibrating the secondary standards that make possible the precise fits and close tolerances needed today in industry. Without an extension of the Bureau's facilities through a standards laboratory such as this, our industry would be seriously hampered in producing the highly complicated and precise new electronic and mechanical equipment being developed today, he said.

The National Bureau of Standards was the guide and counsellor of IT&T in developing the laboratory, said John Gingrich, the laboratory's president.

The importance of the laboratory and its place in today's rapidly developing scientific knowledge was pointed out by Henri C. Busignies, Head of the Federal Tele-Communications Laboratories. He recalled that in 1926 he measured electrical frequencies by using a tuned fork for checking a low frequency oscillator. To check the accuracy of the tuned fork, radio time signals produced by the NBS were used. However, he pointed out, the signal of time measured in accordance with the revolutions of the earth is no longer sufficiently accurate for the precise measurements needed today. In 1926 the accuracy of the frequency measurements was one part in 10,000. In the new IT&T Standards Laboratory accuracy is one part in 100,000,000. Now a quartz crystal replaces the tuned fork and development of the atomic clock has pushed the knowledge of frequency measurements to a point it has never before reached.

As announced by Dr Astin, the first meeting of a committee of the International Society on Weights and Measures was held during the week of June 3 this year to develop an international time standard based on the vibration of atoms.

The new IT&T Laboratory is an attempt to bridge

the gap between scientific knowledge and production and to make a higher level of accuracy available to production engineers as well as to laboratory scientists.

Electrical Section

The electrical section of the IT&T Standard Laboratory maintains standards and equipment for making a wide range of basic electrical tests with a high degree of precision.

These measurements include: resistance, capacitance, inductance, frequency, voltage (direct and alternating), current (direct and alternating), and power.

A Rohde & Schwarz RF Wattmeter permits measurement of power from 5 milliwatts to 100 watts at frequencies from 0 to 3200 megacycles. Power measurements of direct-current and of single-phase alternating-current frequencies up to 125 cycles are made on Weston wattmeters.

An R. Jahre Tera-ohmmeter permits measurement of resistance up to 5,000 million ohms. Resistances from 1 ohm to 11 megohms are measured by a Leeds & Northrup Anthony-Pattern Bridge to an accuracy of $\pm$ 0.05 percent.

The Laboratory also has a Rohde & Schwarz Precision Resistance Meter with a range of 0.01 ohm to 100 megohms and Leeds & Northrup NBS type standard resistors. The latter are certified by the National Bureau of Standards.

The standard of voltage employs Weston type standard cells that have been certified by the National Bureau of Standards. They produce voltages that are known to within 0.01 percent. A Leeds & Northrup K-3 potentiometer is used to refer the standard cell voltage to other values of more direct use in testing.

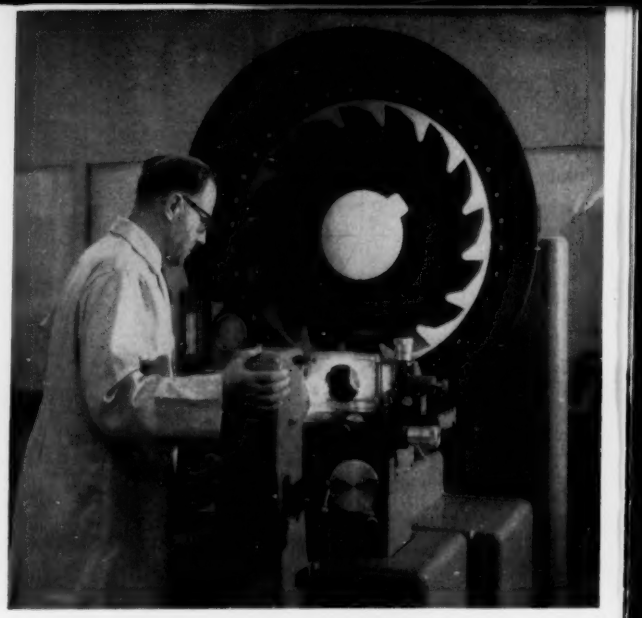
For microvolt ranges, a Wenner potentiometer replaces the K-3 instrument. Voltage and current measurements at frequencies up to 15,000 cycles are made on a Sensitive Research self-checking polyrange thermocouple unit. The instrument measures direct current from 200 microamperes to 2 amperes and d-c voltage from 5 millivolts to 1000 volts. Alternating-current measuring range is 15 milliamperes to 3 amperes and 300 millivolts to 750 volts.

The basic standards of frequency are the standard frequencies broadcast by the National Bureau of Standards. A Rohde & Schwarz decade frequency measuring system is compared with the broadcast standard frequency. Frequencies between 30 cycles and 600 megacycles can be measured to an accuracy of 1 part in 10 million.

The determination of values of inductance and capacitance to within an accuracy of 0.02 percent are obtained by comparison with inductors and capacitors certified by the National Bureau of Standards.

Mechanical Section

Included in the Mechanical Laboratory is the latest model Carl Zeiss, Koester's Absolute Interferometer, the only model of its kind in the United States. This equipment permits the user to observe the interference



Profiles or surfaces *of master cutting tools, gears, cams, gages, and other large pieces with intricate shapes may be enlarged for examination as much as 100 times with this 30-inch screen contour projector, which also makes possible measurement of angles, height, and length.*

patterns of light waves in order to make linear measurements of precision gage blocks or other objects having parallel and optically flat surfaces, and permits calibration of master gage blocks to an accuracy of better than one-millionth of an inch.

A set of four double-surface optical flats are used for making interferometric measurements under monochromatic light.

Another method for testing gage blocks employs a Pratt & Whitney "Millionth" Comparator. Working gage blocks are compared with precision gage blocks, certified by the National Bureau of Standards and rechecked by IT&T Standards Laboratory. The comparator can indicate the difference in size between the master block and the block being compared to one millionth of an inch.

For measuring pitch diameters of thread gages, diameters of thread-measuring wires, and linear measurements up to 12 inches, the Laboratory employs a Pratt & Whitney Standard Measuring Machine. Straightness, parallelism, and roundness of cylindrical objects may also be determined. Inherent accuracy of the instrument is within 10 millionths of an inch.

Accurate determination of the lead or pitch of internal or external threads on thread gages and precision threaded spindles is made on a special instrument devised for that purpose—the Sheffield Lead Measuring Machine.

Pitch inaccuracies of less than 0.0001 inch over a length of 2 inches on all forms of threads may be determined and the machine will repeat readings within 0.00002 inch. Parts up to 8 inches in diameter and 18 inches in length may be measured.

Master gears, index plates, spline gages, cams, and similar parts that require extreme accuracy in angular spacing can be checked on a Leitz optical master divid-

ing head. This instrument has an inherent accuracy within 2 seconds of arc and angles may be read over the full circle of 360 degrees optically from a master glass circle that is permanently attached to the spindle.

Determination of circular divisions of drawn, etched, or photographic type dial scales may also be made on a Leitz toolmaker's microscope to 1 minute of arc by means of the instrument's rotary measuring stage. The microscope also permits measurement of small tools and gages, including thread gages.

A Leitz linear microscope equipped with a Perflectometer comparator is capable of measuring ring gages below 0.07 of an inch in diameter. It also checks for roundness and taper of small holes to millionths of an inch and is capable of measuring roundness, curved surfaces, lengths, up to 8 inches.

Master cutting tools, gages, gears, cams, and a variety of large pieces may be examined in profile with a 30-inch Kodak contour projector. The instrument will enlarge up to 100 times the profile of small parts to permit measurements of angles, height, and length. Polarizing filters may be used for photoelastic stress analysis.

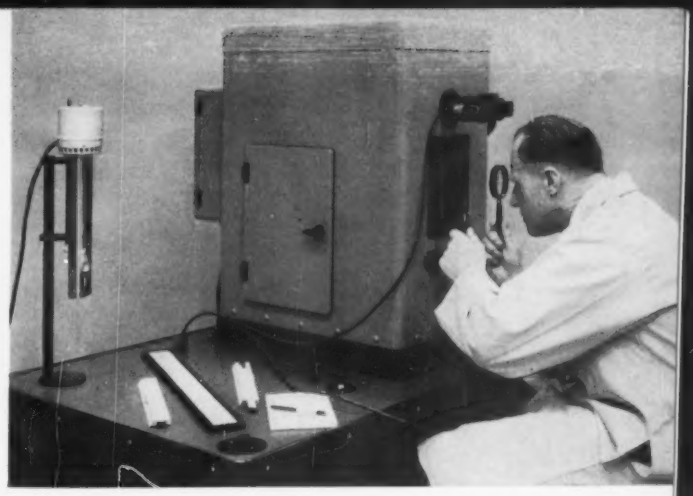
Through the use of a Tukon microhardness tester, the Laboratory can certify calibration-standard samples for use in hardness testing instruments, according to Knoop diamond or diamond pyramid (Vickers) scales. The test load may be varied from 10 grams to 50 kilograms.

For accurate measurements of surface finish of master shafts, bearings, slideways, cams, gears, gear teeth, ball-bearing races, and similar parts, the Laboratory employs a Taylor Hobson "Talysurf" surface-measuring instrument. Values in microinches may be registered on a recorder, and average microinch readings are indicated on a meter.

For checking minute angular displacements at distances up to 30 feet, the Laboratory employs a Watts Microptic Auto-Collimator, which is capable of measuring angular tilt to fractions of a second of arc. The Auto-Collimator may be used to check two mutually perpendicular surfaces, to measure contours and small linear displacements, to test angles on jigs and fixtures, to check circular tables and indexing features of dividing equipment, and for setting and checking the location of the circle in an optical inclinable table. Because the instrument is portable, it may be taken outside the Laboratory to make checks of large pieces of equipment such as the flatness of machine beds and large surface plates.

Supplementing the Auto-Collimator is a Watts Microptic Precision Clinometer for setting inclinable tables of jig boring machines, for setting angular work for grinding and lapping machines, and for inspection of angular faces and locations on jigs, fixtures, and gages. Maximum error of indication of any angle is not greater than 10 seconds of arc, or 0.0005 inch over a length of 10 inches.

As an aid in checking flatness, a Sheffield Precision-



Laboratory's physicist *here checks temperature within latest model Carl Zeiss, Koester's absolute interferometer, which measures master gage blocks to within better than one millionth of an inch.*

aire Indicator and Plunjet stone flatness gage are used. The stone gage is made of polished graphite with an overall flatness of 50 millionths of an inch.

In determining the smoothness of gage blocks to 0.000001 in., a Carl Zeiss Opton Interference Microscope is employed. This instrument contains a built-in interferometer which directs light from a source along two optically identical paths so that it may be reflected, respectively, from an optically flat surface and from the surface of a work piece being measured. The interference microscope may be employed for measuring small cylindrical and spherical surfaces as well as plane surfaces.

When the object is too large to be placed on the instrument's measuring stage, or has a concave or other less readily examined surface, a plastic or lacquer replica of the surface, or a portion of it, may be made. The microscope has a built-in 35mm camera.

One of the newest and most advanced instruments available, the Link Fringecount Micrometer, is used for the measurement of master gage blocks, set plug gages, thread wires and similar standards where absolute measurements of outside dimensions are desired. The instrument, using a half wave length of krypton light as an absolute standard, incorporates optical, mechanical, and electronic principles to allow extremely rapid measurement (60 second setup time) readable to 0.000001 in. The instrument operates by optically scanning the object being measured and transferring the resulting fringe patterns to multiplier phototubes which are connected to an electronic counter.

The Mechanical Section *of the new IT&T Standards Laboratory.*

A Service for the Nation's Technology

Address presented at dedication of IT&T Standards Laboratory, Clifton, New Jersey, June 11, 1957

by **Dr Allen V. Astin**
Director of the National Bureau of Standards

IT is a highly valued privilege to take part in the dedication of this standards laboratory. I believe that here we are witnessing an important step towards insuring the growth and further development of American science and technology. I believe, furthermore, that this laboratory will add significantly to the nation's industrial progress. We must continue to extend to our economy the vital benefits which stem from standardization and precision measurement.

Standards and precision measurements are the essence of our modern way of life. Our mass production economy depends upon them, for when we speak of quality control, interchangeable parts, specified tolerances, and the like, we are speaking of the measurement process. And measurement, as we all know, gains its meaning from agreed upon physical standards. Today measurement is a science not an art. To be scientific, it requires specialized equipment and specialized personnel such as those assembled for work in this laboratory. I anticipate that the talent in this laboratory, using the precision instruments available to them, will provide the country with important services and will contribute to the science of measurement.

As Director of the National Bureau of Standards, I heartily welcome facilities such as these that add to our national capability for precise measurement. These facilities will help to maintain our nation's technological strength. I mention this because it is becoming increasingly evident that our country is engaged in an important technological competition with the Soviet nations. In his television interview about ten days ago Nikita Krushchev emphasized the Soviet objective of competing with us on a productivity basis.

This country, if it is to maintain its competitive position, must lead the way in the science of measurement. We cannot afford to be second best. We must exert ourselves to see to it that precision measurement is made available to all the elements of our economy.

That we are engaged in a technological race may be adequately documented. Recently I had the opportunity to review a translation of a Russian article which appeared in *Measurement Engineering*, a journal of science and engineering, which is an organ of the Committee on Standards, Measures, and Measurement Apparatus of the Council of Ministers of the USSR. I want to quote a few excerpts from this translation. Note, if you will, the emphasis placed upon measurement and standards. Note, furthermore, that this is a matter of official policy. The article speaks about the "6th five-year plan" to provide "a new powerful uplift in the national economy of the USSR—in order to overtake and to excel the more developed capitalistic countries in productivity per capita."

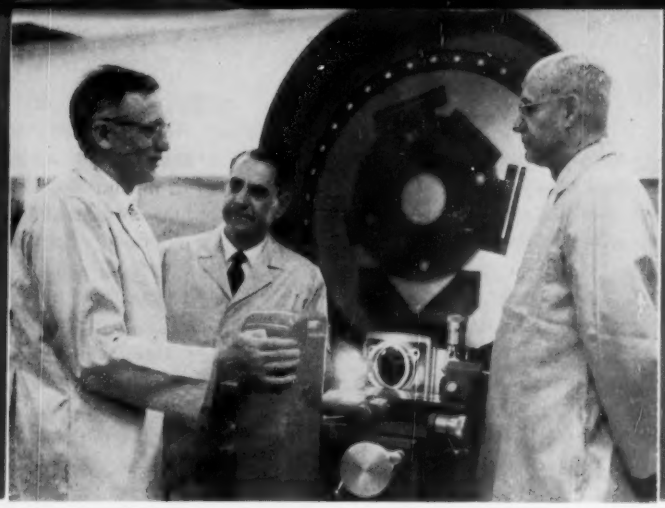
Here are some quotations from the "Plan Directive" which calls for a three- to four-fold increase in various instrument production capabilities.

"The Directive presupposes that the national economy will be supplied with the necessary measurement instruments produced on the basis of current attainments in science and engineering.

"In order to assure a broadened productivity to base for the supply of instruments for general industrial use, the Plan Directive provides for the construction and placement into operation, during the 6th five-year period, of 30 instrument construction factories.

"By order of the presidium of the top soviet of the USSR there is established a Ministry of Instrument Construction and Means of Automation, a step which will allow significant improvement in the instrument construction industry.

"A decree of the Council of Ministers of the USSR in October, 1955, insures the application of measures directed toward the attainment within the next two to three years, by the system of the Committee of Standards, Measures and Measurement Instruments, of a level allowing it to fully and currently satisfy all requirements of the national economy in the control-measurement engineering.



Dr Allen V. Astin (left) inspects a 30-inch contour projector during dedication of IT&T Standards Laboratory. With Dr Astin are John E. Gingrich, president, Federal Telephone and Radio Company, and Dr Allen Lough, representative of the Atomic Energy Commission.

"In the Plan Directive, objectives are also established for raising the importance of scientific institutions in technological progress, and the conversion of the work of these institutions so that they are drawn closer to involvement in meeting the concrete needs of the economy and maximum employment of the accomplishments of domestic and foreign science and engineering.

"Great objectives, flowing from this, are placed also before the research institutions of the Committee on Standards, Measures and Measurement Instruments, which must bind their own activities with those of the productive economy, eliminating existing backwardness in research in the fields of metrology and control-testing in relation to the needs of the national economy."

Now these excerpts quoted from official Soviet sources are indicative, I believe, of the real concern being exhibited by the Russians in the field of measurement and of the importance of extending this science into all areas of the economy. It is indicative, furthermore, of the recognition being given at the policy level to this critical aspect of international technologic competition.

Against a background such as this, you can readily see why it is crucial that we, in the United States, devote our attention towards maintaining our leadership in the fields of measurement and standards. For this and other reasons, it is a source of encouragement that we dedicate this standards laboratory.

I think it is important, however, that I make known the other reasons why standardizing laboratories are valuable. Even if we were not engaged in a technological race, even if there were no international competition for measurement superiority, we would still need effective standards and measurement efficiencies distributed through our economy. Our way of life depends upon it. The phenomenal growth of our technological economy has been intimately dependent upon advanced measurement techniques in order to control the physical characteristics of its many and various products. Furthermore, an essential element of our industrial fabric is the specialty manufacturer who makes instruments or machine tools for the use of other producers or components or subassemblies which become integral parts of consumer products made by another manufacturer. Consider the scores of complex parts which make up a modern automobile or television set. Many of these are made in plants separate from the one where the final product is assembled, and each must conform to a rigorous specification of its pertinent physical properties. In order that this industrial complex operates smoothly, there must be measurement techniques and standards which give confidence in the things measured. Thus, our consumers live more abundantly, more comfortably, and more safely because of the application of accurate measurements and standards to the material things of this nation.

It is in this sense that I should like to describe how this International Telephone and Telegraph Standards Laboratory can join with the National Bureau of Standards in serving the country. Let me tell first how our organization will work together in achieving a common end.

The National Bureau of Standards, to begin with, is the custodian of the national physical standards of measurement. It has the responsibility of maintaining and developing new standards. And it is charged with the duty of developing new or better techniques of measurement and of appropriately disseminating these standards and measurement techniques to Government, science, and industry. The Bureau maintains standards in almost all of the physical sciences. As new areas of science and technology are explored, it is important that the Bureau undertake the research and development necessary to insure that reliable and meaningful standards exist in these areas.

It is a matter of some concern to us that the demands for standards, measurement techniques, and precise testing and calibration have out-distanced our ability to provide direct service. The fact is that the research and development requirements of our programs are such that we can at best provide only very limited direct service to the public. We consider that we are a scientific service agency. By that I mean, we seek to serve central or key professional organizations, to calibrate master instruments and transfer standards, and to enable competent private standardizing and testing laboratories to provide effective and valuable measurement services to the scien-

tific and industrial communities. It is by working with professional scientific organizations, with specalized standardizing laboratories, and with groups involved in the science of measurement that the National Bureau of Standards can expect to serve most effectively in spreading the benefits of standards and measurement throughout the economy. With the cooperation of laboratories such as this one, the program of precision measurement will have a multiplied effect upon the nation.

The demand for measurement services is so great that no one organization can adequately service the need. In the case of the National Bureau of Standards, our responsibilities associated with providing and extending the fundamental standards require that we limit our services to industry by undertaking activities which can best be performed by or are unique to the Bureau. Thus, we look to highly specialized laboratories, such as this one, to give to industry many of the services that it needs. Although several private laboratories have made available services in other fields of technology, there has been a lack of commercial facilities which could undertake adequately the services needed in dimensional and electrical measurement and in extending the availability of reliable reference and working standards. This laboratory should go a long way towards meeting that need.

Before coming here today, I read with considerable interest the brochure describing this new laboratory. I was impressed by the range of services which can be provided here, by the specialized equipment which has been assembled to make these services meaningful and valuable, and by the degree of precision which can be attained here. It seems evident that this laboratory will be in a position to provide industry with the latest in technical assistance in the fields of dimensional and electrical meas-

For a Good Safety Record in the

TEXTILE INDUSTRY

LAST YEAR the frequency rate of disabling injuries in the textile industry per one million manhours was 5.07. This compares with 2.13 for the electrical equipment industry, 4.16 for steel, and on the other end of the scale, 9.95 for steel and iron products, and 12.08 for the transit industry. Although 5.07 may be considered a medium injury rate, the textile industry has taken steps to do something to prevent the occupational injuries represented in this figure. As a result, it joined with other groups concerned—insurance, safety, workers, government organizations, textile machinery and safety equipment manufacturers—to develop an American Standard Safety Code for the textile industry. This standard was approved by the American Standards Association late last year and is now available as a published document. Its official title is American Standard Textile Safety Code, L1.1-1956.

The provisions for the standard, written precisely for the textile industry, are minimum requirements. The committee believes that adoption of these rules by the textile industry is one answer toward elimination of the industry's occupational injuries.

The opinion has often been expressed that initiation of a safety program in an ailing industry such as textiles is too costly. This opinion is not justified by the facts. Records now available prove that those mills that are operating profitably have substantial budgets for accident prevention. In American Standard L1.1-1956, the entire textile industry now has ammunition to do a good job in the safety field and to help cut down the cost of accidents that are expensive not only to the workmen involved but also to the industry itself. Adoption of the safety code by individual plants is entirely voluntary. However, it represents a careful and thorough suggestion for solving the problem that any textile plant may find helpful. The committee that prepared the standard diagnosed the causes of accidents in the textile industry before preparing the final draft and, just as the doctor prescribes treatment for illness, the committee prescribed corrective measures it believed would apply directly to the industry's specific accident problems.

Before the standard was finally completed, the proposed draft was given a preliminary trial in some of the New England States. The result was evidence that corrective action along the lines proposed would not constitute too much of a burden to the industry. It was also found that some of the provisions could be applied directly by the personnel of the plants involved.

During this trial period the committee members noted that as a result of the educational value of the proposed safety requirements the employees of the textile industry became aware that it was their responsibility to work safely, as well as the responsibility of the management to provide safe conditions. With the guidance given by the provisions of this standard, the experienced worker, more than anyone else, realizes that his future can be marred by an accident. The skilled worker in the industry, as well as the industrialist who employs him, will be gratified to find a solution to one of the ills harrassing the industry.

This trial run helped to give the committee a picture of what to expect when the standard requirements finally were completed. The prime purpose and interest of this try-out, the committee believed, was in the opportunity

urement. I want, at this time, to congratulate the International Telephone and Telegraph Corporation, not only for the establishment of this laboratory but also for its rather profound contributions to the encouragement of industrial scientific research in this country.

And now, I should like to make a final, important point. I believe that a significant part of every laboratory should be devoted to creative research. I feel quite certain that this laboratory, centered as it is upon the science of measurement, will contribute to the advancement of that science, not merely by providing effective and reliable measurement services (although this, in itself, is vitally important) but also by continuing the search for new and better measurement techniques, for more precise instrumentation, and for higher precision. We, at the National Bureau of Standards, know that the staff of this laboratory will recognize with us that today's measurements will not meet tomorrow's requirements. The dependence of our technological economy on new and more precise measurement techniques is such that we can look upon precision as a measure of our progress. The advancement of the measurement science requires that a portion of any laboratory program be devoted to the basic sciences. And, in fact, the basic sciences in turn depend upon advancements made in the science of measurement. Thus if both types of activities are pursued concurrently not only will they be mutually beneficial to each other, but they will also contribute more effectively to the nation's scientific and technological progress.

Thus, this new Standards Laboratory, operating in the environment provided by its parent company, can look forward confidently to filling an important role in the nation's technological growth and adding to the abundance and security of our way of life.

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by **Frank W. Marcaccio**

Mr Marcaccio is Chief of the Division of Industrial Inspection of the Department of Labor, State of Rhode Island. He is Chairman of Sectional Committee L1 on the Industrial Safety Code, which works under the sponsorship of the National Safety Council.

it offered to inform the textile industry on the measures that can be taken to cut down the costly accidents that in some cases are blamed when textile plants are shut down. It is serious enough when any plant is forced to close. It is a misfortune to have people unemployed. However, it is a decided shock when management is heard to state, at times publicly, that it has had to close its doors because of the cost of accidents. If this American Standard Safety Code, which has been worked out through the cooperation of experts representing nation-wide groups concerned with the problem, can be used to prevent the jolt to the textile industry of economic loss due to accident costs and can prevent the closing of a single textile plant, it will have more than justified the many hours of work that have gone into it.

The new safety code applies to design, installation, operation, and maintenance of textile machinery, equipment, and other plant facilities in all plants engaged in the manufacture or processing of textiles. It does not, however, apply to processes used exclusively in the manufacture of synthetic fibers.

Among its specific recommendations is the arrangement of equipment to provide adequate clearance between machines. It calls for mechanical and electrical means for stopping each individual machine. It makes provisions for lighting, for safe exits, and for insulating of steel pipes. It provides for metal covers that will prevent contact with beaters, for fastening covers of clean-cut holes of fans or picker beaters, and for guards on feed rolls. And it makes specific recommendations for guarding cards, garnett machines, spinning mules and slashers. It provides a table of maximum openings in the guards and working surfaces; and it provides for swiveled double-bar gates. It also provides for interlocks on gear housing covers and for guards that will minimize the danger of having a loom shuttle fly out of the shed. It calls for wire screen barriers on the aisle or passageway, and for means to help the loom fixer prevent the loom from being started while he is at work. It provides maximum openings between the surface and the bottom of the guard of all revolving blades on shearing machines.

This is only an example of the many specific details that are covered in these minimum requirements. Others apply to the continuous bleach range, to kiers, to gray and white bins, to the mercerizing range for piece goods, to mangles, laundry washers and shakers, to printing machines and to calenders, as well as to open tanks and vats for mixing and storage of corrosive liquids, and many more.

This is a comprehensive document, applying to all processes of a textile plant.

We are all interested in keeping the textile industry a "going" proposition, for we know that making cloth and processing fibers is one of the oldest industries since creation.

To disrupt this valuable industry by an increasing number of accidents causing injuries is to admit failure for safety engineers, business men, wage earners, and, indirectly, our home makers. It is our purpose to prevent this failure from materializing.

Copies of the American Standard Textile Safety Code, L1.1-1956, are available at 75 cents.

The American Standard discussed in this article, Socket Head Cap Screws and Socket Set Screws, B18.3-1954, is one of a series of standards on bolts and nuts being developed by Sectional Committee B18. American Standards already available in this series are:

Small Solid Rivets, B18.1-1955
Square and Hexagon Bolts and Nuts, B18.2-1955
Socket Head Screws and Socket Set Screws, B18.3-1954
Large Rivets (½ Inch Nominal Diameter and Larger), B18.4-1950
Round Head Bolts, B18.5-1952
Slotted and Recessed Head Screws, Machine, Cap, Wood, Tapping, and Slotted Headless Types, B18.6-1947
Slotted and Recessed Head Wood Screws, (Partial Revision of B18.6-1947), B18.6.1-1956
Hexagon Head Cap Screws, Slotted Head Cap Screws, Square Head Set Screws, and Slotted Headless Set Screws (Partial Revision of B18.6-1947), B18.6.2-1956
High-Strength High-Temperature Internal Wrenching Bolts, B18.8-1950
Plow Bolts, B18.9-1950
Track Bolts and Nuts, B18.10-1952

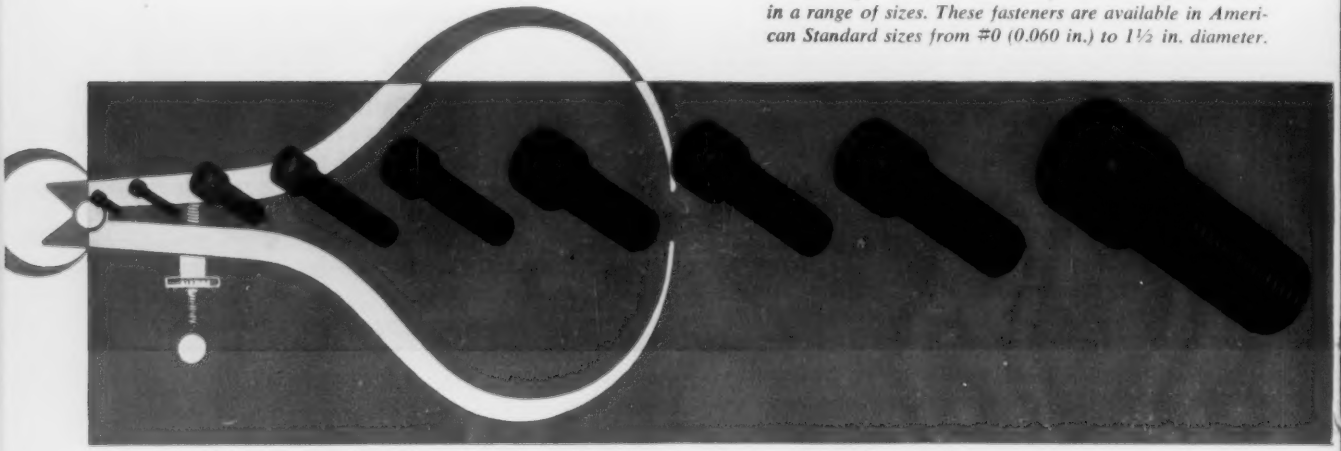
Most recent activity by Sectional Committee B18 has been the reaffirmation of American Standard B18.4-1950, Large Rivets. The committee studied the 1950 edition of the standard and asked the American Standards Association to reaffirm it officially as being up to date and still valid.

The committee is also working actively on Slotted and Recessed Head Screws, Machine, Cap, Wood, Tapping, and Slotted Headless Types, B18.6-1947. A revision of the section on slotted and recessed head screws was completed and published in 1956 as B18.6.1-1956. The section on hexagon head cap screws, slotted head cap screws, square head set screws, and slotted headless set screws has also been completed and published as B18.6.2-1956. This completes two of the four parts into which the 1947 edition of the standard will eventually be transformed. The two sections not yet completed are: Slotted and Recessed Head Machine Screws and Machine Screw Nuts, B18.6.3; and Slotted and Recessed Head Tapping Screws and Metallic Drive Screws, B18.6.4. Recently, American Standard B18.6-1947 was reprinted, now including only that portion of the 1947 edition that has not yet been revised. The B18.6 standard, therefore, is now available in three documents, B18.6-1947, B18.6.1-1956, and B18.6.2-1956.

Sectional Committee B18 is sponsored by the American Society of Mechanical Engineers and the Society of Automotive Engineers. Officers of the committee are: H. W. Robb, Manager, Company Standards, General Electric Company, Chairman; R. A. Frye, Manager, Materials and Standards Section, Westinghouse Electric Corporation, Vice-Chairman; W. C. Stewart, Technical Advisor-Treasurer, Industrial Fasteners Institute, Secretary.

This article, By F. W. Helming, Sr, chairman of the B18 subcommittee in charge of American Standard B18.3-1954, shows the application of this standard and its place in the current trend to miniaturization.

Socket cap screws, *in hex and fluted sockets, are shown in a range of sizes. These fasteners are available in American Standard sizes from #0 (0.060 in.) to 1½ in. diameter.*



Standardization and Application of

SOCKET HEAD CAP and SOCKET SET SCREWS

by **F. W. Helming, Sr**

Assistant works manager, The Bristol Company; Chairman, subcommittee 9 of ASA Sectional Committee B18

FOR some time prior to 1928 the producers of socket set screws and socket head cap screws realized the need for the standardization of the head and socket dimensions. In September of that year, through the initiative of one of the manufacturers, a start was made toward the unification of these dimensions.

About that time the activities of the Sectional Committee on the Standardization of Bolt, Nut, and Rivet Proportions, later known as Sectional Committee B18, came to the attention of the leaders of this group. Their inquiries soon led to the inclusion of this type of screw within the scope of the sectional committee.

The organization meeting of Subcommittee 9 followed on April 5, 1929. Copies of the original proposal of the manufacturers were distributed to the members of the new subcommittee, forming the basis of the committee's work.

As the first step toward the development of an American Standard for this product, including the keys, a thorough canvas of the practice of both producers and consumers was made. After this a first draft of the proposed American Standard was outlined, carrying the date November, 1931. Seven successive drafts were issued in which the content of the proposal was considerably extended and refined.

Finally in March, 1933 copies of the proposed American Standard were distributed generally to industry for criticism and comment. The suggestions received were carefully reviewed, and on March 5, 1935 the proposed standard was presented to the members of the Sectional Committee on Bolt, Nut, and Rivet Proportions for vote of approval by letter ballot. It was approved by the American Society of Automotive Engineers and the American Society of Mechanical Engineers on February 17, 1936. It also was designated as an American Standard by the American Standards Association.

In accordance with ASA procedure, the standards have been reviewed periodically for the purpose of keeping them in line with developments in industry. The most recent revision to be approved was issued in 1954 and is designated as B18.3-1954.

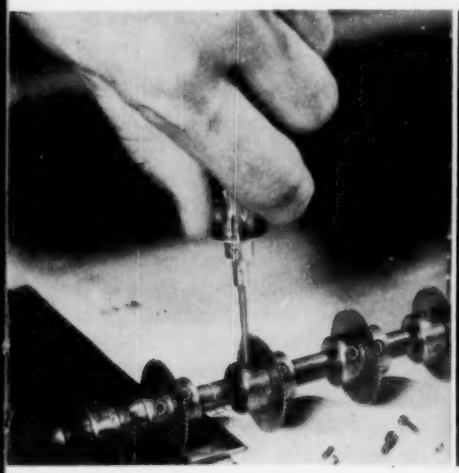
This revision included the addition of Socket Cap Screws sizes #0 and #1, and Set Screw sizes #0, #1, #2, #3, and #4. These small sizes were added because of the increasing demand from various industries for miniature fasteners. Also included in this revision to provide a more complete standard were specifications regarding material, hardness, and thread fit.

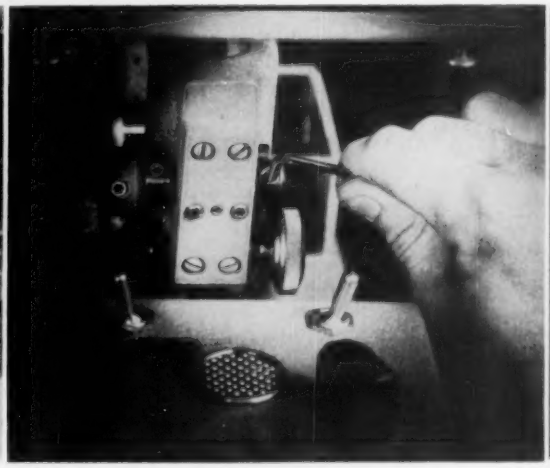
The current American Standard includes dimensional data covering socket head cap screws with hex and fluted sockets in sizes from #0 to 1½ in. diameter inclusive. Socket head shoulder screws (stripper bolts) with hex and fluted sockets are shown in sizes from ¼ in. to 1¼ in. diameter, inclusive. Socket set screws with hex and fluted sockets are shown in sizes #0 to 2 in. diameter, inclusive. Also included are the various types of points available—cup, flat, cone, oval, half dog, and full dog. Hex and fluted keys for use with the various types of screws are also shown in the full range of sizes.

One word of caution should be noted when using these standards. While it is intended that any given size should be completely identified, it does not necessarily follow that all sizes and lengths shown in the standard will be carried by the manufacturer as stock items.

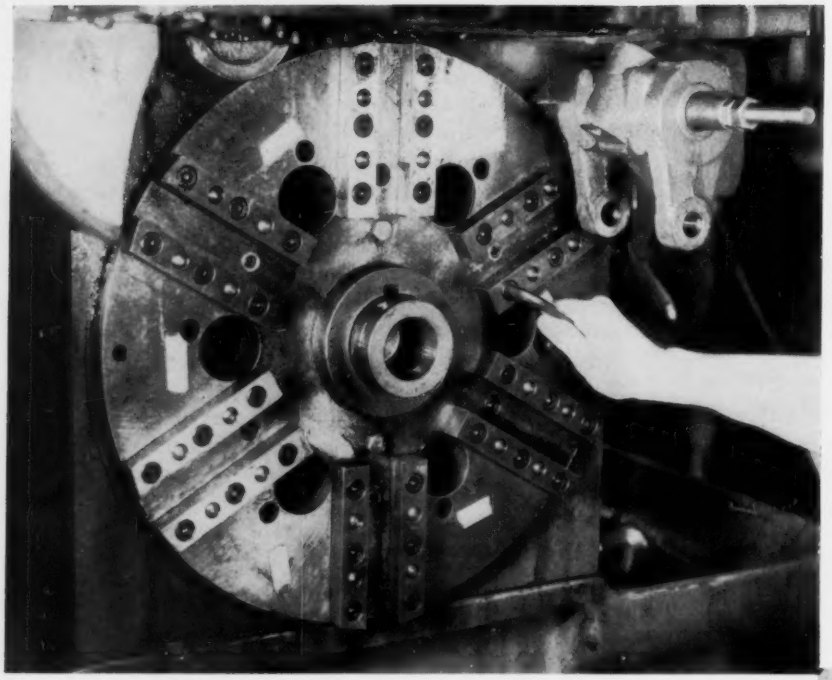
Recessed socket screws are classified as a high-strength fastener. The type of alloy steel used permits heat treating to high strength levels with good all around physical properties. The design of the socket provides for positive wrenching, while the type of alloy steel used in the key permits maximum torque to be applied to the fastener.

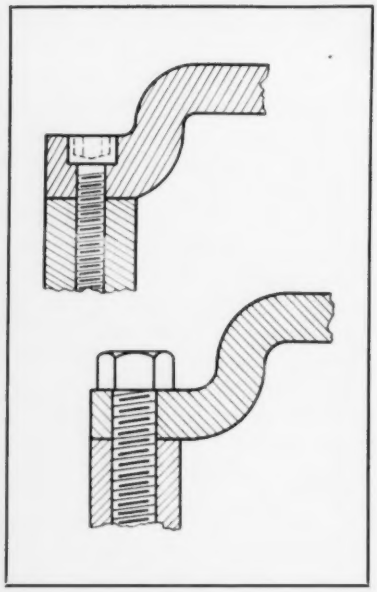
The design of the hex or fluted recessed type socket





Socket set screws, *used to hold perforating cutters on a revolving shaft (center). Internal wrenching feature of the socket screw allows tighter setting and the screw is less apt to loosen during service.* **Tightening recessed socket screws** *having fluted sockets (right). Alloy steel fluted keys permit the application of maximum torque*

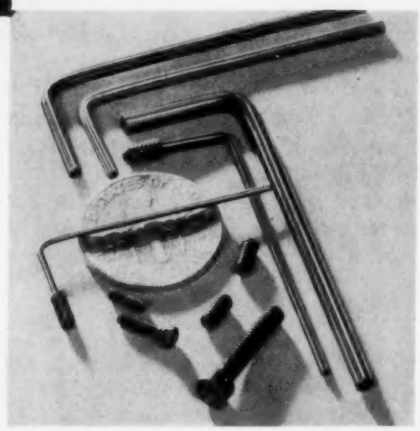




Recessed socket cap screws *used as fasteners on the end plate of an automatic screw machine (above). Design allows smooth revolving surfaces, without danger from protruding screw heads.*

This drawing (*top right*) *shows the comparative size of bosses required with high-strength socket screw and hex head cap screw.*

Miniature socket cap and set screws, (*right*) *shown here with their keys, and with a dime for comparative size, are included in the American Standard down to* #0 (0.060 *in*). *wire size, in hex and fluted sockets.*



is very advantageous from the designer's standpoint. When used in conjunction with revolving equipment, the screw may be recessed completely below the surface, thus eliminating any dangerous protrusion that might tend to catch on clothing. Also, this convenient recessing feature permits cleaner, more streamlined design on new equipment.

An important advantage to be gained in using this type of fastener in machine assembly is the reduced size of the boss that may be used. The ordinary hex head cap screw requires a comparatively large boss due to the large size screw and the amount of clearance needed for the external wrench. The high strength socket head cap screw permits the use of a smaller screw, and does not require additional clearance for the key because of the internal wrenching feature. This feature is illustrated in drawing above.

Jigs and fixtures can be designed more efficiently with socket head cap screws, because of the elimination of any protrusions that might cause interference in use. Clearance between punch and die may be reduced to an absolute minimum when the heads of the cap screws are recessed below the face of the die.

Socket set screws have received wide acceptance in all types of applications where good holding power is a requisite. The high-strength characteristics permit maximum tightening torque to insure parts being held in proper position. The positive drive characteristics of this type fastener, in combination with an "L" shaped key, provide for easy assembly in awkward locations.

The recent trend toward miniaturization has increased the demand for socket type screws. In practically every field of endeavor, the tendency is to reduce size and weight wherever possible and still maintain adequate strength levels comparable to the previous design. This is a logical place for using socket screws. The same trend also pushed the development of the miniature screws as small as #0 size (.060 in. diameter), for use in electronic equipment, radio, radar, and numerous other types of equipment.

INTERNATIONAL OPERATIONS

by **J. W. McNair**

THERE has been international cooperation on standards activities from the earliest days of the American Standards Association.

When ASA's predecessor organization, the American Engineering Standards Committee, was being started, the late Charles Le Maistre, then Director of the British Standards Institution, visited the United States and was freely consulted by those engaged in organizing the new national standardization committee. The make-up of ASA sectional committees closely followed that then used by the British. Later, the experience of Germany and the other national standardizing bodies was freely drawn upon.

It was soon found desirable to develop systematic interchange of technical information among the national standardizing bodies.

The first steps along this line were taken in informal conferences of the secretaries of the national standardizing bodies, the first held in London in 1921 and another in Zurich in 1923.

A third, more formal, conference, held in New York in 1926, resulted in organization of the International Federation of National Standardizing Associations (ISA). The late C. E. Skinner, then Chairman of the American Engineering Standards Committee, served as chairman of the conference and the late Dr Paul G. Agnew served as secretary.

The organization of ISA was proposed by a British delegation. The British proposal, which was supported by a number of other nations, was for a tight, closely knit organization with strong central authority. The AESC had widely consulted its member-bodies and industrial groups in the United States and found that only a loosely organized international association would be acceptable in this country. The American idea was backed by several countries. A week's discussion of the organization plans resulted in a Constitution and By-Laws which provided for a loosely organized international association.

One of the early actions of the newly organized ASA Board of Directors was the affiliation of ASA with ISA. However, World War II forced suspension of ISA.

In December, 1943, during World War II, a technical mission from Great Britain visited the United States to confer on coordination of screw threads. This eventually led to the organization of the ABC Standardization Program, which has resulted in highly successful work on unification of screw threads and is now branching into other subjects, such as drawing and drafting practice.

At the same time that the mission on screw threads visited the United States in 1943, discussions were undertaken which eventually led to the United Nations Standards Coordinating Committee (UNSCC). The function of this loosely knit international organization was to secure the maximum possible coordination of standardization effort between the United States and its allies for the war effort and in the immediate post-war period.

International Organization for Standardization (ISU)

The International Organization for Standardization (ISO) was founded in 1946, to take the place of ISA. It now has 38 nations as member-bodies.

Final authority for ISO is vested in the General Assembly, which is composed of the delegates of the member-bodies and meets every three years.

The membership elects a Council, made up of representatives of 11 member countries and the ISO president. This Council governs ISO. The Council appoints the general secretary of ISO who heads the administrative offices in Geneva, Switzerland.

ISO is supported financially through dues paid by the member-bodies. For the United States these dues are paid by the American Standards Association. ASA also sends, at its own expense, staff delegates to the ISO Council and General Assembly and to some of the other ISO meetings. Most American delegates representing ASA at technical committee meetings travel at the expense of their industry or organization.

ISO operates in this way. At the request of an ISO member, the Council canvasses the member-bodies concerning their interest in participating and approval of a proposed international project. If approved, a technical committee may be formed to conduct the necessary work on an international recommendation. Such a technical committee is composed of representatives of the national standards bodies that are ISO members and desire representation. (A delegate accredited by the American Standards Association represents the United States.) At least five members must participate in each project. Members who do not participate in a particular project may ask to

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Mr McNair is Assistant Technical Director and Assistant Secretary of the American Standards Association. For many years he was ASA staff engineer in charge of the work on electrical standards under ASA procedures. In this connection he worked as secretary both of the Electrical Standards Board and to the United States National Committee of the International Electrotechnical Commission. He has been in close personal touch with ASA international operations both through IEC and through the International Organization for Standardization. This description of international operation on standards was presented at the meeting of ASA Member-Bodies and Associate Members, April 24-26, 1957.

be kept informed of the progress of the work. One member-body of ISO is appointed to take over the secretariat of a technical committee. The secretariat is responsible for outlining a program or scope of work and for circulating it through ISO headquarters to other committee members for consideration and approval. Whenever necessary, the secretariat calls international meetings of the committee members to further and facilitate the work through personal discussions. Decisions of the committee are made by majority vote. An international agreement developed and agreed upon by an ISO technical committee is called a *Recommendation*. Acceptance and use of a Recommendation by the member countries and their industries, trades, and professions is entirely voluntary.

The ISO now has 83 technical committees covering a wide variety of subjects. Nearly all fields of science and engineering are covered except for the electrical field which is taken care of by the International Electrotechnical Commission (IEC). Although IEC is autonomous, it serves as ISO's electrical division.

On April 1, 1957, 37 ISO Recommendations had been accepted and 117 Draft ISO Recommendations were under consideration.

ASA is actively participating in 41 of the 83 ISO technical committees and has observer status on all others. ASA serves as the Secretariat of the following nine technical committees:

Unification of boiler codes, ISO/TC 11
Copper and copper alloys, ISO/TC 26
Petroleum products, ISO/TC 28
Cinematography, ISO/TC 36
Photography, ISO/TC 42
Plastics, ISO/TC 61
Determination of viscosity, ISO/TC 66
Materials and equipment for the petroleum industry, ISO/TC 67
Nuclear energy ISO/TC 85

International Electrotechnical Commission (IEC)

The International Electrotechnical Commission (IEC) is an autonomous technical department of ISO. It develops international recommendations in the field of electric light, power, and communications.

The 32 National Committees that are members of IEC are composed of representatives of the various technical and scientific organizations which deal with questions of electrical standardization in their respective countries. There is one committee for each country. Most committees are recognized and supported by their respective governments.

United States interests in the IEC are represented by the U.S. National Committee, which is an arm of the American Standards Association.

The procedure of IEC is similar to that described for ISO. Its administration is carried out by a Council composed of the officers and one representative from each National Committee. The Council meets at least once every three years. A Committee of Action composed of the president and nine elected members deals with admnistration between meetings of the Council.

Although IEC Recommendations are not binding upon the member organizations, it is strongly recommended that these organizations follow them when drawing up their nation's specifications.

The IEC now has 41 technical committees. The USNC participates in all but two and has approved, to date, 49 published IEC Recommendations.

The IEC was founded in 1904 in St Louis and therefore has been working for many more years than the ISO. It has been suspended during the course of both World Wars, but since World War II, its growth has been nearly as spectacular as that of the ISO.

International Commission on Rules for the Approval of Electrical Equipment (CEE)

Thirteen European nations have created an organization known as the International Commission on Rules for the Approval of Electrical Equipment (CEE). Working closely with IEC, the CEE fixes international safety standards for electric appliances and wiring materials. The United States is not represented in the work of the Commission. Through the USNC, however, it has an official observer present at many of its meetings. The mandatory aspects of its work on standards in many countries are important to American industry.

"ABC" Conference on Unification of Engineering Standards

The ABC Conference was created during World War II by the English-speaking nations (USA, Britain, Canada) to draw up industrial standards as part of the defense of the free nations of the Western World.

Serious wartime problems had arisen in the production of American, British, and Canadian arms and other defense goods because they were being made to different standards.

The ABC Conference has been meeting at irregular intervals since 1943. The screw threads of the three nations were standardized in a now-famous Declaration of Accord signed in 1948, which established the Unified Screw Thread System and brought to the world a universal inch system of screw threads.

Work has been carried on among the three member countries, and great progress made, in standardizing nuts and bolts, limits and fits, production or engineering drawings, screw thread gaging practices, and other refinements in screw thread design. A further meeting of the ABC Conference, primarily concerned with drawing and drafting practice, will be held early this fall at some place still to be chosen in the western hemisphere. Mr T.R.B. Saunders, Consultant to the British Standards Institution, has just returned to England from a period in the USA discussing arrangements for these meetings.

AS implied above, the international work covered by the organizations discussed is ever increasing. At the meetings of IEC held in Munich last July, ASA, through the U.S. National Committee, was represented by 51 delegates. At the next meetings of the IEC to be held in Moscow this coming July, a delegation of about 25 now appears probable. From the beginning of April, delegations representing the United States have attended or are expected to attend the following meetings:

Gas Cylinders, ISO/TC 58, The Hague
Screw Threads, ISO/TC 1, Lisbon
Laboratory Glassware, ISO/TC 48, London
Agricultural Tractors, ISO/TC 22 T, Lisbon
Agricultural Machines, ISO/TC 23, Lisbon
Electrical Installations on Shipboard, IEC/TC 18, Rapallo
Documentation, ISO/TC 46/SC 1, London
Pulleys and Belts, ISO/TC 41, Milan
Building construction/Modular coordination, ISO/TC 59/SC 1, Paris
Plastics, ISO/TC 61, Burgenstock
ISO Council, Geneva
Nuclear energy, ISO/TC 85, Geneva

A number of proposals for new projects are before ISO for consideration. Before a new project may be started, at least five countries must agree on the desirability of the work and must agree to participate in it. When a proposal for new work is received by ASA, a general conference of all concerned in the United States is called to consider the proposal and to make recommendations to the responsible standards board on the following questions:

(*a*) Shall the ASA participate?
(*b*) Shall the ASA offer its services as Secretariat?
(*c*) How shall American technical participation be carried out; that, is through a sectional committee, through a specially appointed group, or through a committee of some other organization where mutually agreed?

In recent months, consideration has been given in this way to proposals for new ISO work on fiber building boards, cork, pictorial marking for handling instructions for non-dangerous goods, saws and sawing machines, refrigeration, and nuclear energy. Conferences have recommended participation in all but one of these.

A new ASA publication, entitled "Master Key to Export Sales," discusses many aspects of America's concern with international standardization.

Recent news reports tell of cooperation between the nations of Western Europe on economic matters and the peaceful uses of nuclear energy. If this cooperative effort comes about, and it now appears that it very likely will, we in the U.S. will be faced with stronger and more unified competition for markets in South America, Asia, and Africa. There can be little doubt that effective participation in international standardization work will help keep us up to date on what is going on. It will also help to ensure that the undeveloped countries will ask for goods of the quality which we normally make.

The growth of international standardization work reported above is placing an ever increasing workload on ASA, its Standards Boards, sectional committees, sponsors, officers, and staff. More conferences are necessary to determine the desires of industry as to participation in new projects and on review of existing projects where we now have only observer status. More documents are being received which must be studied and replied to by ASA on behalf of the sponsors, sectional committees, and advisory groups. The large number of Draft Recommendations referred to above must all be reviewed and voted upon in the case of those technical committees in which ASA is participating, and all of them must be voted upon by ASA as a Member-Body before final approval. More work is necessary in obtaining delegations to go abroad to Technical Committee meetings and in seeing that they are equipped to represent American interest before their departure for the international meetings.

All in all, international standardization work is a going and growing concern and the ASA staff solicits your assistance in doing a better job in seeing that our country is well represented and that the views of industry are presented in an effective way.

Secretaries of national standards bodies met at Zurich, Switzerland, in 1923, in one of first international meetings on standards (far left). Dr P. G. Agnew (USA) is seated second from right. Meeting in New York, 1926, completed plans for an International Standards Organization (center). C. E. Skinner, chairman, AESC, is fifth from left. ISO General Assembly in New York, 1952, displays flags of 33 members (right). ISO President was Dr Albert Caquot, France (speaking).

CMC WORKSHOPS

Discuss Marking Metals, Data Processing, Tolerancing

WHEN the Company Member Conference of the American Standards Association held its Spring Meeting at Hartford, Connecticut, May 27 and 28, the members spent their time discussing problems of special interest to them in their work. One of these problems was whether it is important for metals to be marked to identify their characteristics, and, if so, whether it is economically feasible to so mark them. Another was what effect on standards work may be expected as a result of the increasing use of computers and computer techniques. The third was drawing practice, particularly the new concept of positional tolerancing contained in Section 5 of the proposed American Standard Drafting Manual that is now near completion.

The Company Member Conference is composed of representatives of companies that are members of the American Standards Association, who meet to exchange ideas and experiences on standards and to make recommendations to ASA concerning standards in which they are interested. Some 112 members and guests attended the Spring Meeting.

W. C. Cadwell, Caterpillar Tractor, Peoria, Ill., is chairman of CMC, and James R. Welshman, Grinnell Corporation, Providence, R. I., is vice-chairman.

On the subject of Marking of Metals, J. R. Walgren, Standards Engineer, Aluminum Company of America, Pittsburgh, served as panel leader. He explained that the CMC had asked the American Standards Association to call a General Conference to find out whether a standardization project should be set up. Results of the conference were not positive, however, and ASA had decided not to organize a project. Mr Walgren, himself, is still interested in a national standard for identification of tool steels, he said.

Identification of materials is extremely important in certain cases in construction of chemical plants, declared C. J. Veith. Mr Veith is Superintendent, Material and Equipment Section, Engineering Department, Construction Division, E. I. du Pont de Nemours & Company, Wilmington, Delaware. It is particularly important, when materials are to be subjected to severe corrosion, that corrosion-resistant materials be used, he pointed out. Du Pont uses a color code to identify a particular grade of stainless steel which has been corrosion evaluated and must be used for certain severe service conditions. Mr Veith was of the opinion that a more uniform and standardized marking system is desirable but that it is questionable whether the additional cost of such a system could be justified.

The identification marking used by the Defense Department is a continuous marking system that gives the minimum information needed by the user in order to answer the question "What is it?" explained Gerard J. Marks. Mr Marks is with the Standardization Division, Office of Assistant Secretary of Defense, Supply and Logistics. This system was put into effect during World War II when lack of proper identification of materials had resulted in economic loss and serious failure of equipment. The Defense Department now has three marking standards: MIL-STD-182, Nickel and Nickel Base Alloys; MIL-STD-183 Iron and Steel Products; Mil-STD-184, Aluminum, Magnesium, and Titanium. A fourth, on identification marking of copper and brass products, is now being coordinated with industry. Mr Marks believes that this is not a problem of the government alone, but that adoption of a uniform marking system on a national scale would be practicable and desirable.

Charles M. Parker, Assistant Vice-President of the American Iron and Steel Institute, on the other hand, expressed opposition to extending the military requirements to civilian use. Industry is satisfying the requirements of MIL Standard 183 at considerable expense and with difficulty, he said. He believes that greater efficiency on the part of the Defense Department would make it unnecessary to mark the metals for identification. He also is concerned lest an identification marking system

Certificates *honoring past chairmen of the Company Member Conference for their contribution of leadership to ASA are presented (left to right) by Vice Admiral G. F. Hussey, Jr, managing director of ASA, to William Fleming, Jeffrey Manufacturing Co; Marvin Olson, National Cash Register Co; Samuel Watson, Radio Corporation of America, and Robert Walgren, Aluminum Company of America. Other past chairmen not present will receive their certificates by mail. They are: W. H. Kiler, formerly with E. I. du Pont de Nemours & Co, Inc; H. W. Robb, General Electric Company; W. P. Kliment, Crane Company; and K. B. Clarke, formerly with Western Electric Company.*

clusions: (1) ASA might consider the possibility of standardizing markings for tool steels only; (2) More uniformity in marking is desirable but the results may not justify the added price; (3) Standardization should start with nonferrous metals and proceed to tool steels; (4) The present marking provisions in existing specifications are adequate.

Alfred Gastler, Purchasing Department, Consolidated Edison Company of New York, was panel leader for the session on How Data Processing Can Help Your Standards Program.

Mr Gastler pointed out that more and more machines are being developed to help do the mechanical work in order to free men to use more time in the judgment process.

By means of data processing it is possible for management to keep itself up to date with the facts of its business, pointed out Gordon Bower, Machine Application Manager of Moore Business Forms, Inc. Fifty years ago, a company usually had a single bookkeeper, who at the end of each day would total up all accounts, thus giving the owner a picture of his exact financial situation. As everyone knows, however, during the last 50 years bookkeeping has become more and more complicated and has required more time. As a result records have fallen behind and management has had to act on data which may be from three weeks to three months old. With the new data-processing machines that are now available, management can again have up-to-date information on which to base its decisions.

One of the current problems, however, Mr Bower declared, has to do with checking and verifying data. The cost of such checking is growing out of proportion to the benefits that result, he said. As a result, some managements are accepting a concept of "management by exception." Under this concept management receives data only on exceptional situations or when things go wrong, and not on regular activities.

In order to use the new data-processing methods, a systematic study must be made of the problem to be solved. The problem must be accu-

At the Spring Meeting *of the Company Member Conference, members toured plants of the Royal Typewriter Company, the Hamilton Standard Propeller Company, and Pratt and Whitney, Inc. Here is a group at the Royal plant.*

tend to eliminate chemical checks, hardenability checks, and other methods of independently identifying the steel at destination before use. Mr Parker recommended that materials handling methods and practices be re-examined and improvements instituted as a means of obviating the need for marking.

Those present at the meeting separated into small workshop groups following the general presentation, giving everyone an opportunity to take part in the proceedings. At the session on metals marking the groups reported somewhat conflicting con-

rately stated before being fed to the machine, Mr Bower explained. Now, many small pieces of office equipment are being made to be coupled directly to the large computing machine, making it possible to produce different types of information quickly.

John J. Connell, Electro Data Division, Burroughs Corporation, believes that the most important advantage to be gained from computers is integration of equipment. This makes it possible to do many by-product jobs while doing the basic job, he explained. For example, while making payroll checks, the new computers make it possible to use the same information to update retirement plan, social security, and income withholding tax records. Thus, although a standardization department may not be able to justify the cost of a machine for its own use, it may be able to use a machine on a part-time basis to assemble facts that would be valuable in the standardization activity. For example, if a computer is already used for inventory records, the same information might be used to determine the number of various sizes and varieties of items, the number of items of various types and purposes, and similar information that would help to show where future standardization would produce best results.

One of the principal requirements is that the problem to be solved must be stated mathematically, explained John B. Jackson. Mr Jackson is Regional Applied Science Representative, International Business Machines Corporation, New York. The problem must either be represented by a set of mathematical equations or a table of numerical values, he said. Such a system can be used in solving problems concerned with design—transformer designs, gear designs, or even designs of nuclear reactors. After the design problem is set up in terms of numerical values, the computer will give the answers very quickly. By changing certain values by various increments it is possible to work out thousands of different designs for the same item, and by comparing the answers it will be possible to pick out the one best design for the product, he said.

IBM is using a digital computer to keep track of manufactured parts, Mr Jackson declared. The first step was to prepare a catalog in code. It was then necessary to provide code numbers for each new part. By means of the computer it is now possible to prepare a coded parts list which shows all parts released to products, and it has also been possible to eliminate duplicate parts. The list includes some 60,000 coded parts, and some 20,000 of these are up-dated each month. It has been possible to reduce the number of new parts designed annually from approximately 6,000 to 4,000.

The workshop groups reported a great deal of interest in the methods discussed. Reports indicated general agreement that it would be valuable if a start could be made now to collect data on tape or cards. This information might be invaluable in a period of five or ten years when it might be possible to put other parts of the system into effect, it was reported. Important advances can be expected in the next few years, it was stated, since the computer industry can be considered to be only about five years old at the present time.

Roy P. Trowbridge, director, Engineering Standards Section, General Motors Corporation, Detroit, was panel leader for the session on Drafting, Dimensioning, and Tolerancing. He reported that Section 5 on dimensioning and tolerancing of the proposed new standard drafting manual has been approved by the sectional committee and is being submitted to the sponsors. It is hoped that it will be approved as American Standard and available for use at the ABC conferences on drawings to be held early this fall between representatives of the British, Canadians, and Americans. This section represents a new concept in engineering drafting. Certain information formerly left to the engineering department to be handled within the range of tolerancing will now be included on the drawing.

Using slides, T. J. O'Connor illustrated the point that in the past dimensions have been shown either as rectilinear coordinates or as polar (angular) coordinates. He also recalled that most drawings show a tolerance specification either on the dimensions or as a note on the drawing. Many American groups are now trying to eliminate the inadequacies of the former methods of dimensioning and tolerancing, he explained, by introducing a new system of true positional tolerancing. This system is being used more and more by private companies and by governmental agencies, as well. True positional tolerancing is being given consideration in the British, American, Canadian conferences as well as in the individual countries, he pointed out.

The positional tolerancing system is very important in locating bosses, slots, and holes in order to provide for the assembly of mating parts, explained J. Stannard, Engineering Department, Pratt & Whitney Aircraft Division of United Aircraft. This new concept, now being presented by Sectional Committee Y14, is equivalent to showing the controls to assure perfect fit on the drawings. By using slides, Mr Stannard showed that on circular parts, the actual tolerance of the hole and the shaft may be varied considerably depending upon a number of factors, such as "out of roundness" and curvature within the length of the shaft. This same principle can be adapted to noncircular features, he said. More extensive use of true position tolerancing will help to simplify the job of the draftsman, the manufacturer, the gagemaker, and the inspector, he believes.

P. G. Belitsos, Aircraft Gas Turbine Division, General Electric Company, believes that this method of geometrical tolerancing will have a far-reaching effect on mass production. His paper will be published in full in the August issue of THE MAGAZINE OF STANDARDS.

The members of the Conference wound up their two-day meeting with plant tours of the Royal Typewriter Company, the Hamilton Standard Propeller Company, and Pratt and Whitney, Incorporated.

BOOKS.....

Automation in Business and Industry. *Edited by Eugene M. Grabbe. First edition. 1957. John Wiley and Sons, Inc, 440 Fourth Avenue, New York 16, N. Y. 6 x 9. 611 pp. 341 illus. $10.00*

Reviewed by S. P. Kaidanovsky

Nineteen papers by 21 experts are included in *Automation in Business and Industry*, edited by Eugene Grabbe, just published. The authors survey the present status of automation and outline its future. This new book, based on a series of lectures by prominent engineers and scientists at the University of California, presents a wealth of authoritative and up-to-date information on the fundamentals of automation, including descriptions of automatic systems of application, the language of automation, manufacturing automation computers, data processing, and economics of automation. The treatment is general rather than technical and is presented in clear and simple language. The progress made in standardization of terminology in the fields of feedback control, automation process control, and servomechanisms is demonstrated by tables covering these subjects. A brief glossary of selected terms is presented from sources such as American Standards and standards of the Institute of Radio Engineers, The American Society of Mechanical Engineers, the American Institute of Electrical Engineers, and the British Standards Institution. Sources also include glossaries of the Association for Computing Machinery and the magazine *Computers and Automation*.

L. K. Lee, General Mills, Inc, author of the paper "Automatic Production of Electronic Equipment," emphasizes the importance of standardization in the electronic industry, by stating that "before automatic production of electronic equipment becomes feasible, it is necessary to establish standards for the fabrication processes, the design and construction of the product, and the materials used."

Recognizing the lack of standards in the electronic industry, the author points out that "The machine tool manufacturer, electronic component manufacturer, materials supplier, and the electronic equipment assembler are trying to arrive at suitable compromises on standards for (1) manufacturing tolerances for component lead and body dimensions; (2) indexing mechanisms; (3) material for printed circuit plates; (4) circuit layouts; (5) automatic inspection and test methods; and a multitude of other considerations."

No doubt the development of nationally recognized standards not only in the electronic industry, but also in other fields, will accelerate the introduction of automation in business and industry.

If It's Photography — There's an American Standard. *American Standards Association, 70 East 45 Street, New York 17, N. Y. 16 pp. No charge.*

This publication lists and describes the benefits of, 42 American Standards for cameras; 26 for films, plates, and papers; 3 on microfilm; 30 on processing and processing equipment; 70 on photographic grade chemicals; 7 on projection; 89 on motion pictures.

Recommendation for the Classification of Materials for the Insulation of Electrical Machinery and Apparatus in Relation to Their Thermal Stability in Service. *IEC Publication 85. 1957. First edition. International Electrotechnical Commission, 1 rue de Varembé, Geneva, Switzerland.* $2.00

Approved by 18 of the Member-Body countries of the IEC, these recommendations are intended as a general guide to the classification of a number of insulating materials.

This publication consists of three sections and an Appendix containing a wide-range table of insulating materials and their relation to bonding, impregnating, or coating substances.

Section I is a general introduction to the problems of thermal stability of electrical insulation. Section II provides classification of insulating materials and the temperatures assigned to them, grouping the various insulating materials into recognized classes (Y,A,E,B,F,H, and C). Section III tells how to assess thermal stability of materials.

The Recommendation associates each class of material with a temperature which, when adopted as the maximum temperature, will ensure an economic life for the insulation in a wide range of apparatus. This publication does not deal with temperature rises.

Atomic Radiation. *1957. 110 pp. RCA Service Company, Inc. Government Service Department, 217 Highland Avenue, Westmont, N.J.*

In these days of controversy over the dangers of fall-out from atomic bomb tests, here is a clearly and simply written but thoroughly authoritative presentation of the effect of radiation on the human body and the meaning of permissable levels of exposure. The research on which this book is based was supported by the United States Air Force and monitored by the Aero Medical Laboratory, Directorate of Research, Wright Air Development Center at Wright-Patterson Air Force Base. The book is reprinted by RCA with permission of the Center. In clear and understandable language it presents the theory of ionizing radiation, the biological effects of radiation, methods of shielding and monitoring to prevent injury, medical care, and permissible levels of exposure. All of this is highly important not only to any one working with atomic energy but also to each member of the general public. The opening abstract of the book explains: "The understanding of radiation to be derived from study of this manual will indicate to the worker his personal responsibilities in avoiding injury by observing all safety precautions that have been devised for his benefit."

FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk * indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering copies of standards, please refer to the number following the title.

615.4 PRACTICAL PHARMACY. MEDICINES. INSTRUMENTS. HOSPITAL EQUIPMENT

Denmark (DS)

Surgical suture materials DS 908

France (AFNOR)

Glass syringes for medical use NF S 90-012

Germany (DNA)

Injection instruments, dimensions for cones 1:10 DIN 13090

2 stds for surgical instruments DIN 58230 40

Poland

10 stds for different surgeon's instruments PN Z—Series 54

Medical examination couch PN Z-78026

Operating room stretcher and carrier PN Z-78035

United Kingdom (BSI)

Soiled dressings containers for hospitals BS 2798:1956

Straight artery (haemostatic) forceps; Spencer Wells pattern (screw joint) BS 2805:1957

Surgical scalpels BS 2820:1957

Dissecting forceps (plain ends) made of corrosion resisting steel BS 2821:1957

USSR

Sampling and testing of Vitamins A, B_1, B_2, C, D, PP GOST 7047-55

621.9 TOOLS. MACHINE TOOLS. MACHINING

Belgium (IBN)

Carbide tips for turning tools NBN 403

Outside diameter of cutters NBN 406

Bulgaria

Lathes for metal: accuracy of mounting, tolerances BDS 2202-55

Czechoslovakia (CSN)

10 stds for wood turning chisels CSN series 22 54

3 stds for center holes 60° + 90° countersunk CSN 01 49 15/7

Tool sharpening machine, test for accuracy of CSN 20 03 44

Milling cutters for bevel gear (4 stds) CSN 22 26 05, -26 61/2

25 stds for various milling cutters CSN series 22 35

5 stds for auger bits CSN 22 56 72/6

19 stds for different forms of high-speed steel tool tips CSN series 22 07

16 stds for involute broaching cutters CSN series 22 25

Monkey wrench CSN 23 07 77

Hand vises CSN 24 31 05, -31 70

Horizontal turret lathes, checking for accuracy CSN 20 03 05

2 stds for mechanical presses CSN 20 03 91/2

3 stds for sawmill gang saws CSN 22 53 05, -53 60/1

Italy (UNI)

5 stds for hand taps, metric and Whitworth UNI 3801/5

3 stds for twist drills UNI 3806/8

2 stds for milling cutter attachment UNI 3809/10

Carbide tips for lathe cutting tools UNI 3811

Japan (JISC)

6 stds for gear cutting milling cutter JIS B 4351/6

9 stds for different reamers JIS B 4403/11

2 stds for pliers JIS B 4614, 4631*

Hack-saw blades JIS B 4701-54*

Scroll chucks JIS B 4644-1955*

628.2/.3 SEWERS AND SEWAGE WATER

Belgium (IBN)

Biochemical analysis of residual and sewage water NBN 407-56

Germany (DNA)

Manhole cover of sewer system DIN 1229

Gasoline trap in sewer DIN 1999 Bl.1

Roumania (CSS)

Manhole covers STAS 2308-55

United Kingdom (BSI)

Pitch-impregnated fibre drain and sewer pipes BS 2760:1956

661. CHEMICALS (FINE, HEAVY, ETC)

India (ISI)

Common salt for chemical industries IS 797-1955

Refined cresylic acid IS 540 - 1956

Orthophosphoric acid, technical IS 798 - 1955

Japan (JISC)

2 stds (bound together) for amyl and butyl acetate JIS K 1514/5 - 1953 *

2 stds (bound together) for refrigerants JIS K 1516/7 -1954 *

Calcium carbide JIS K 1901-50 *

10 stds for different chemicals JIS K 1101-55, 1102-51, 1202-50, 1306-56, 1405-55, 1406-50, 1407-50, 1422-51, 1424-51, 1501-50 *

Mexico (DGN)

Sodium hydrosulphite K 46 - 1956

Technical ammonium chloride K 47 - 1956

Ether (ethyl oxide) K 19 - 1955

Poland

8 stds for reagents PN C-80045/6, -49, -60, -65, -68, -70

Octane, technical PN C-88027

6 stds for different reagents PN C-80071, PN C-80502, 80069, 80551, 80548, 80063

Portugal (IGPAI)

Salt, refined P - 145

Table salt P - 146

Spain (IRATRA)

Reagents for analysis, concentration of solutions for comparing tests UNE 30 003

3 stds for reagents for analysis of different alcohols UNE 30 063/4/8

629.113 MOTOR CARS. AUTOMOBILE ENGINEERING

Brazil (ABNT)

Terminology of automotive material TB-11R

Germany (DNA)

Automobile lead batteries 6V, 4, 5 to 16 Amper-hours DIN 72311

Straight valves with metal base for tubeless automobile tires DIN 7781

3 stds for automobiles, characteristics DIN 70020

4 stds for gages of different profile wheel-rims DIN 7824, 7840, 7843/4

Ball studs DIN 71803

Oil pressure gage DIN 75551

Wedge brake for automobiles with trailer DIN 76051

Frontal plate for motor snow plows DIN 76060

Rubber tires for motor cycles and side cars DIN 7802

Rims for different types of agricultural machines DIN 7820, 7827

Testing for fuel consumption by automobiles DIN 70030

Automobile hydraulic brake hoses DIN 74225

Draining plugs, metric thread DIN 7604

Truck and bus rubber tires 20, 22 and 24 inches DIN 7805

Automatic trailer coupling DIN 74051

External tooth lock washers DIN 70952

Pipe holding clamps DIN 71555

Wheel rims, diam. 16", 18", and 19" DIN 7816

Clutch plates DIN 73463

Locking nuts DIN 70852

Adjusting screws DIN 71989

Japan (JISC)

Arm type direction indicators for automobiles JIS D 5702-54*

Pneumatic rubber tires for ground vehicles JIS K 6314-1955*

Pneumatic inner tubes for ground vehicles JIS K 6315-1955*

Poland

Tubular rivets with flat head used in motor vehicles PN S-82001

2 types of mountings for starters PN S-76120

Roumania (CSS)

Rubber tires and tubes for automobiles STAS 626/7-54

USSR

Automobile crankshafts GOST 4669-54

Windshield wipers GOST 5029-55

Asbestos band for brake lining GOST 1198-55

Wheel rim profiles for passenger cars and trucks GOST 1056-54

Yugoslavia (JUS)

Clutch lining for motor vehicles JUS M.N3.001

669 METALLURGY

Australia (SAA)

Free-cutting steel bars for machining A.S. No. U.11-June 1956

Mild steel bars and forgings (suitable for bearing shells) A.S. No. U.12-June 1956

35 ton steel (normalised) (limiting ruling section 6 in.) A.S. No. U.13-June 1956

40 ton carbon-manganese steel (suitable for welding) A.S. No. U.14-June 1956

"55" ton, 1 percent chromium-molybdenum steel (limiting ruling section 2½ in.) A.S. No. U.15-June 1956

"55" ton, 1½ percent nickel-chromium-molybdenum steel (limiting ruling section 4 in.) A.S. No. U.16-June 1956

"55" ton, 2½ percent nickel-chromium-molybdenum steel (limiting ruling section 6 in.) A.S. No. U.17-June 1956

65 ton, 1½ percent nickel-chromium-molybdenum steel (limiting ruling section 2½ in.) A.S. No. U.18-June 1956

65 ton, 2½ percent nickel-chromium-molybdenum steel (limiting ruling sections 6 in.) A.S. No. U.19-June 1956
75 ton, 2½ percent nickel-chromium-molybdenum steel (limiting ruling section 2½ in.) A.S. No. U.20-June 1956
Air-hardening, 4¼ percent nickel-chromium-molybdenum steel (limiting ruling section 2½ in.) A.S. No. U.25-June 1956
Carbon case-hardening steel A.S. No. U.26-June 1956
3 percent nickel case-hardening steel A.S. No. U.27-June 1956
4¼ percent nickel-chromium-molybdenum case-hardening steel A.S. No. U.29-June 1956
50 ton, 3 percent chromium-molybdenum steel (suitable for nitrogen hardening) (limiting ruling section 6 in.) A.S. No. U.30-June 1956
45/55 ton, 12 percent chromium steel (corrosion-resisting) (limiting ruling section 6 in.) A.S. No.U. 33-June 1956
45/55 ton, 12 percent chromium steel (corrosion-resisting) (free-machining) (limiting ruling section 6 in.) A.S. No. U.34-June 1965
Chromium-nickel steel (corrosion-resisting) (13 tons 0.1 percent proof stress) (limiting ruling section 6 in.) A.S. No. U.36-June 1956
75 ton, 2½ percent nickel-chromium-molybdenum steel (high-carbon) (limit ruling section 6 in.) A.S. No. U.21-June 1956
80 ton, 2½ percent nickel-chromium-molybdenum steel (limiting ruling section 2½ in.) A.S. No. U.22-June 1956
80 ton, 2½ percent nickel-chromium-molybdenum steel (high carbon) (limiting ruling section 6 in.) A.S. No. U.23-June 1956
100 ton, 2½ percent nickel-chromium-molybdenum steel (oil hardening) (limiting ruling section 2½ in.) A.S. No. U.24-June 1956

Bulgaria

Special alloy for typography types BDS 2289-55

France (AFNOR)

Aluminum and aluminum alloys, determination of tin content NF A 06 - 578
Aluminum and aluminum alloys, determination of chromium content NF A 06 - 581

Germany (DNA)

Aluminum and aluminum alloy, magnesium alloys, beams, channels, and tees DIN 9712/4
Steel aluminum and pure aluminum tubes DIN 1794
Aluminum and aluminum alloys, plates, and strips DIN 17605
Aluminum and aluminum alloys, tubes, bars, wires, sections, etc of DIN 17606
Corrosion tension testing of light metals DIN 50908
Brass sheets and bands DIN 17670
Brass pipes DIN 17671
Brass rods, wires, shapes DIN 17672
Brass drop-forged products DIN 17673

Italy (UNI)

2 stds for tool steel UNI 2955, 3868
2 stds for cold rolled carbon steel strips UNI 3351/2
Chemical analysis of magnesium alloy UNI 3724
Magnetic sheets, common UNI 3794
Martin furnace UNI 3796
2 stds for rolled aluminum and aluminum alloy sheets UNI 3812/3
2 stds for electrolytic manganese UNI 3814/5
Cadmium UNI 3816
3 stds for aluminum and aluminum alloy round wire UNI 3817/9
Aluminum and aluminum alloy hexagon wire and bars UNI 3820
Aluminum and aluminum alloy squares UNI 3821
Aluminum and aluminum alloy strips UNI 3822
2 stds for steel wire and bars for springs UNI 3823, 3871
2 stds for cold rolled steel rails UNI 3839/40

India (ISI)

Wrought aluminum and aluminum alloys IS 733 - 1956

Poland

Steel wire for bicycle and motorcycle wheel spokes PN M-80067 - 1955
Zinc sheets for graphic purposes PN H-92905 - 1956
Steel wire for aeroplane seat springs PN M-80098 - 1955
Aluminum bands PN H-92833 - 1953
Color code for marking structural steel PN H-01103 - 1955
Rolled carbon steel in sheets PN H-92203 - 1955
Marking of thermally treated steel PN H-01101 - 1955
6 stds for chemical analysis of metals PN H-04020 - 1955, -022, -838, -847/8, -868 - 1955
Chemical analysis of lead PN H-04865 - 1956
Aluminum ingots PN H-81761 - 1956
Classification of aluminum PN H-82160 - 1956
Steel for rivets PN H-84022 - 1953
2 stds for hot rolled and forged structural carbon steel PN H-93000/1 - 1954/5
Hot rolled shapes of carbon steel for aerial railway PN H - 92603
Spring steel bars PN H - 93003
Cold drawn steel wire of different grade PN M - 80057
Special steel wire for safety pins PN M - 80085
Carbon steel squares, dimensions PN H - 93217
Carbon steel bands PN H - 93218

Spain (IRATRA)

Solid-drawn and wrought shapes of "cuzin" copper alloy UNE 37 108
Light alloys, classification and symbols of UNE 38001
Aluminum and aluminum alloys, rounds, cold rolled UNE 38041

Union of South Africa (SABS)

Hot-rolled carbon steel bars S.A.B.S. 556/557-1956

United Kingdom (BSI)

Oil hardened and tempered steel wire for springs BS 2803:1956
Electroplated coatings of silver for engineering purposes BS 2816:1957
Iron and steel for colliery haulage and winding equipment. Part 3. 1.5 percent manganese steel castings for mine car couplings BS 2772:Part 3:1957

USSR

Tombac strips, cold rolled GOST 8036-56
Silver and silver alloys GOST 7979-56
Gold and gold alloys, methods of analysis GOST 7980-56
4 stds for aluminum alloy shapes, pressed GOST 8110/3-1956
Steel sheets for roofing, galvanized GOST 8075-56

678 MACROMOLECULAR MATERIALS

India (ISI)

Specification for fuel pump diaphragm fabric IS 1001-1956

Japan (JISC)

Rigid polyvinyl chloride pipes JIS K 6741-1954*

Poland

Goodrich method for tear resistance of rubber PN C-04254
Rubberized fabrics Schopper test for porosity PN C-04261
5 stds for different tests of rubber PN C-04214, -34, -42, -46/7

Union of South Africa (SABS)

Standard spec for transparent adhesive tape for identity cards SABS 532-1955

United Kingdom (BSI)

Methods of testing plastics; Part 1: Effect of temperature BS 2782:Part 1:1956
Methods of testing vulcanized rubber;
Parts D 1 and D 2: Determination of plastic yield of ebonite BS 903:Parts D 1 & D 2:1957
Parts E 1 to E 6: Methods of testing cellular ebonite BS 903:Parts E 1 to E 6:1957
Methods of testing vulcanized rubber;
Part A4: Determination of compression stress-strain BS 903:Part A4:1957
Part A9: Determination of abrasion resistance BS 903:Part A9:1957
Methods of testing plastics: Part 2. Electrical properties BS 2782:Part 2:1957

697 HEATING, VENTILATION, AIR CONDITIONING

Austria (ONA)

Specifications for brick oven construction ÖNORM B 2233 ONORM B 2233

Brazil (ABNT)

Terminology used in air conditioning engineering TB-1R

Germany (DNA)

Transportable ceramic space heater DIN 18894
Cast iron continuous fire stoves DIN 18892
4 stds for boilers for central heating systems, 6 and 10 kg/cm² working pressure DIN 4801/4
Coal-heated hot-water reservoir DIN 18889

Japan (JISC))

Radiator accessories for heating JIS B 8403-1955*

Poland (PKN)

Graphical symbols for central heating PN B-01400-1954

Roumania (CSS)

Regulations for ventilation of industrial plants STAS 1238-55

USSR

Radiators for central heating installations by hot air GOST 7201-54

778 APPLICATIONS OF PHOTOGRAPHY

Belgium (IBN)

Manipulation and storage of microfilms of 16 or 35 mm NBN 393
Documentary reproduction. Microscopes on transparent bases. Sizes NBN 423

Denmark (DS)

Film strips DS 371

Germany (DNA)

Projector slides DIN 108
Plate holder for radiography DIN 6832
Standards dimensions of sheet films, photographic paper etc for the use in medical application of X-rays DIN 6831
Stereoscopic slides DIN 4531
Connection socket and pin for flash synchronization JIS B 7102

Japan (JISC)

5 stds for photo lenses and lens mounts JIS B 7110/4

Spain (IRATRA)

Microfilm spools for 16 mm and 35 mm raw stock UNE 1060
Microscopy, terminology UNE 1059
Microfilms, preservation, filing and handling UNE 1067

NEWS BRIEFS.....

• In addition to the general meeting of the IEC, which was held in Moscow, USSR, from July 2-12, 1957, during which many technical committees also held meetings, a number of the IEC Technical Committees will meet in Zurich, Switzerland, during the period of October 1 to October 11, 1957. It is estimated that approximately 15 delegates will attend these meetings on behalf of the United States. The meetings to be held during this period are:

IEC/TC4—Hydraulic Turbines
IEC/TC39—Electronic Tubes
IEC/TC40—Components for Electronic Equipment
IEC/TC39/40—Tube and Valve Sockets
IEC/TC40-1—Capacitors and Resistors
IEC/TC40-2—Radio-Frequency Cables and Connectors
IEC/TC40-3—Piezo-Electric Crystals
IEC/TC40-4—Connectors and Switches
IEC/TC40-5—Basic Testing Procedure

• At its meeting in May, the Nuclear Standards Board paid particular attention to detailed arrangements for presenting the USA viewpoint at the meeting of the international project on Nuclear Energy, ISO/TC85. The first meeting is being held in Geneva, July 29 through August 1.

• John H. Carson, chairman of the committee in charge of the Gas Transmission and Distribution section of the American Standard Code for Pressure Piping, was recognized last year for his ability and leadership. He was made vice-president and general manager of the East Ohio Gas Company, Cleveland, with which he has been affiliated since 1933.

Mr Carson's career with the company started in 1933 following his graduation from Michigan College of Mining and Technology and Case Institute.

He became assistant chief engineer in 1936, but changed the course of his activities when he was appointed purchasing agent in 1943.

He has been vice-president since 1950.

Mr Carson is a member of the American Gas Association and chairman of the General Management Section. He is also a member of the Cleveland Engineering Society, the American Ordnance Association, the National Fire Protection Association, the National Association of Corrosion Engineers, and the Cleveland Chamber of Commerce.

John H. Carson

Robert J. Nossaman

• Robert J. Nossaman has been named by the Telephone Group as one of its representatives on the Standards Council of the American Standards Association. Mr Nossaman is Director of Design Engineering of Bell Telephone Laboratories. In this capacity he directs outside plant development, quality assurance, specifications, drafting, and standards. He has been with the Bell System since graduation from the University of Colorado in 1922. During these 35 years he has had broad experience in inspection, quality assurance, field engineering, plant systems engineering, and in development of apparatus for outside plant use as well as of station apparatus used by telephone customers.

Mr Nossaman succeeds A. D. Knowlton, also of Bell Telephone Laboratories.

• A three-man ASA delegation attended the Plenary Session and Working Group meetings of ISO/TC48 on Laboratory Glassware and Related Apparatus in London on May 6-10, 1957. Dr R. D. Thompson, Taylor Instrument Companies, was the leader of the delegation. Other members were Mr Charles T. Collett, National Bureau of Standards and Mr Olaf M. Loytty, Corning Glass Works.

• A new study committee on cermets is being formed by the American Society for Testing Materials. Cermets comprise the group of materials that combine properties of ceramics and metals and show promise of outstanding service under high temperatures and abrasion. First problem of the new committee will be to study and observe commercial progress in manufacture of cermets to determine when test methods and standards are needed. At present cermets are made for experimental use and no one type is made by more than one manufacturer.

• A committee of outstanding industry representatives has been working with the Federal Housing Administration in preparing a revision of FHA's minimum requirements. The new standards, now being circulated to industry for industry's viewpoint, are performance requirements not specifications, as in the past. The advisory committee working with FHA includes:

James T. Lendrum, American Institute of Architects, director of the Small Homes Council at the University of Illinois; member of ASA Committee A97 on application of gypsum wall board.

Leonard Haeger, AIA, former research director of FHA, former research director of National Association of Home Builders, now technical director for Levitt; formerly member of ASA's Standards Council, and of ASA sectional committee on modular coordination and on light and ventilation.

David Slipher, housing consultant and former assistant technical director of FHA; former construction chief for Fritz Burns, now president of Webb & Knapp Communities; member of ASA Committee A62 on Modular Coordination.

Gaillard to Hold Seminar in San Francisco

Dr John Gaillard, Management Counsel, will hold his first private five-day seminar on Industrial Standardization on the West Coast immediately following the ASA's National Conference on Standards. The seminar dates are November 18 through 22, 1957, and the place is the St Francis Hotel, San Francisco. A more detailed announcement will follow.

Irwin Jalonack, housing consultant, former technical director for Levitt.

Andrew Place, trustee of the NAHB Research Institute.

Edward Fickett, AIA, house architect and student of new building methods and materials.

Howard Vermilya, AIA, former technical director of FHA, now vice-president of American Houses, Inc.

Harold Hauf, chairman of architecture, Rensselaer Polytechnic Institute, chairman of Building Research Advisory Board; formerly chairman of ASA Committee A53 on light and ventilation, and a member of ASA Committees A62, modular coordination, and A55, administrative requirements for building codes.

Both Mr Haeger and Mr Hauf received the Modular Award for 1954, presented by the sponsors of Committee A62, coordination of dimensions of building materials and equipment.

• Packaging experts were baffled when beer-drinking natives in Africa ripped off the sides of well-packaged electronic instruments. Reason? A symbol resembling a beer bottle had been used to indicate that the contents were fragile. The natives therefore, hoped to sample some good American beer.

At a meeting in April, a cross-section of U. S. industry, representing air cargo, photographic materials, packaging engineers, U. S. government, materials handling, marine underwriters, and others concerned with the shipment of materials that require special handling, voted for the development of standard symbols for marking nondangerous goods.

Meeting at the offices of the American Standards Association in New York, the group discussed the problem of insuring delivery of goods, intact to any part of the world, regardless of means of transportation or language spoken by those handling the material.

The conference asked the American Standards Association to participate in an international project on pictorial markings which will be carried on through the International Organization for Standardization (ISO).

As a means of developing the American viewpoint, the group asked ASA to establish a project for developing American Standards in the field. Such standard markings would cover all items from delicate

(*Continued on page* 214)

NAM Recommends Nuclear Standards

Industry believes that a set of safety standards should be developed in the field of nuclear energy under the procedures of the American Standards Association, according to the National Association of Manufacturers. NAM's booklet, *Industry Believes, 1957,* contains among other policy positions of the Association the statement of NAM's policy on regulatory protection from nuclear hazards, adopted by the Association's Board, September 21, 1956.

"There are unique health and safety hazards in any nuclear energy program," the policy statement declares. "At present general standards are not available as a guide for protection of life and property from those hazards. If industry is to utilize its full potential in development of peaceful uses of atomic energy, regulations pertaining to the control of such hazards, applicable to all nuclear energy operations, should be promulgated without delay.

"Historically, regulations concerning industrial health and safety have been the responsibility of the individual states and not the Federal Government. Many of these state regulations have been adopted through the development of a comprehensive set of American Safety Standards under the procedures of the American Standards Association. A set of control standards in the field of nuclear energy should also be developed in the same manner by the American Standards Association. The AEC, the state health and labor departments, producers, users, and employees, insurance, and other groups having a substantial interest in these problems should cooperate with the ASA in the development of regulations satisfactory to all which can be adopted uniformly by the AEC and state and local regulatory groups. Uncoordinated regulations in the nuclear energy field would tend to bring about an untenable and chaotic situation.

"It is recognized that the development of such standards is a difficult and continuing problem and any regulations containing such standards may be subject to revision as additional technical data are accumulated. Nevertheless, this fact does not lessen the need for action without delay to aid industry in determining the extent of its obligations.

"Industry also believes that industrial safety would be aided greatly if military know-how and other developments relative to equipment and techniques for defense protection against nuclear warfare, including radioactive fall-out, were to be released to industry as frequently and quickly as military security permits. Such knowledge would not only equip industry to deal with the peculiar hazards associated with the production and use of nuclear energy but would considerably enlarge industry's ability to assist the national and state governments in programs of civil defense and national security."

instruments to experimental animals being shipped around the world.

The group recommended the Society of Industrial Packaging and Materials Handling Engineers to serve as sponsor of the American project. American Standards will be developed by technical experts serving on a committee representing all groups concerned.

The Indian Standards Institution, national standards body of India, will be secretariat of the ISO project.

• Both Western Germany (German Federal Republic) and Eastern Germany (German Democratic Republic) are now represented by the German National Committee of the International Electrotechnical Commission. This unification of the German standardization work in the electrical field took effect June 20. Professor Dr R. Vieweg continues as president of the German National Committee. The secretariat remains at Frankfurt on Main.

• English translations of some 172 Japanese standards on shipbuilding have been received from the Japanese Standards Association. These standards have been compiled by the Nippon Shipbuilding Standards Association under the supervision of the Bureau of Ships of the Japanese Government's Ministry of Transportation. They are classified under the following: General; Hull Division; Machinery Division; Electrical Division; Material Division; Ferrous and Non-Ferrous Metals; and Chemistry. They can be consulted at the ASA Library by members of the American Standards Association.

• Fifty delegates from 11 countries attended the first meeting of the ISO Subcommittee on Compressed Gas Cylinder Design held April 8-11 at the Institute of Social Studies, The Hague. The Netherlands Commission for Standardization was host.

The subcommittee was organized two years ago at the Stockholm meeting of the Plenary Committee of ISO Technical Committee 58 and charged with the responsibility of creating an international recommendation for compressed gas cylinders. As its initial step in this direction, the subcommittee discussed every aspect of compressed gas cylinder design, and reviewed the cylinder specifications of the different countries during the four-day Hague meeting. The subcommittee will meet again in about one year at a time and place still to be determined.

Delegates from the United States, Holland, Austria, France, West Germany, the United Kingdom, Belgium, Italy, Sweden, Norway, and Japan participated in the meeting. The interest of the compressed gas industry in the U.S. was represented through the American Standards Association, U.S.A. member of ISO. ASA delegated to the Compressed Gas Association the responsibility for preparing and presenting the necessary information at the international level.

The U.S. delegates were F. R. Fetherston, Secretary, Compressed Gas Association, Inc, and K. G. Jobson, Linde Air Products Co, member of the CGA Executive Board.

Fifty delegates from 11 countries *attended the ISO subcommittee meeting on compressed gas cylinders. Standing fifth from the left, second row from the bottom is J. J. Ph. Cattel, Minister of Social Justice, The Hague, who presided as chairman. USA delegates were F. R. Fetherston, extreme right, second row from bottom, and K. G. Jobson, extreme right, bottom row.*

AMERICAN STANDARDS UNDER WAY

Status as of June 27, 1957

Legend — *Standards Council* — Approval by Standards Council is final approval as American Standard; usually requires 4 weeks. *Board of Review* — Acts for Standards Council and gives final approval as American Standard; action usually requires 2 weeks. *Standards Board* — Approves standards to send to Standards Council or Board of Review for final action; approval by standards boards usually takes 4 weeks.

Note — Send check when ordering standards listed as published to avoid service charge for handling.

BUILDING AND CONSTRUCTION

American Standard Published

Basis for the Coordination of Dimensions of Building Materials and Equipment, A62.1-1957 $0.35
Sponsors: American Institute of Architects; Associated General Contractors of America; National Association of Home Builders; Producers' Council
Basis for the coordination of dimensions of building materials and equipment, and the correlation of building plans and details with such dimensions; and the method for the establishment of standard coordinated sizes and dimensions of building materials and equipment.

CHEMICAL INDUSTRY

In Standards Board

Common Name for 3-(p-chlorophenyl)-1,1-dimethyl urea (monuron), K62.2-
Common Name for 3-(3,4-dichlorophenyl)-1,1-dimethyl urea (diuron), K62.3-
Common Name for 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (erbon), K62.6-
Common Name for 1-*n*-butyl-3(3,4-dichlorophenyl)-1-methylurea (neburon), K62.8-
Common Name for 2,2-dichloropropionic acid (dalapon), K62.9-
Common Name for 2-(2,4,5-trichlorophenoxy)propionic acid (silvex), K62.10-
Common Name for p-chlorophenyl p-chlorobenzenesulfonate (ovex), K62.11-
Sponsor: U.S. Department of Agriculture

DRAWINGS AND SYMBOLS

In Standards Board

Graphical Symbols for Use on Railroad Maps and Profiles, Y32 (Revision of Z32.2.5-1950)
Sponsors: American Institute of Electrical Engineers; American Society of Mechanical Engineers

ELECTRIC AND ELECTRONIC

American Standards Published

Electrically Heated Pads and Bedding, Safety Standard for, UL 130, ASA C33.7-1957 $0.75
Sponsor: Underwriters' Laboratories
Automatic Null-Balancing Electrical Measuring Instruments, Specifications for, C39.4-1956 $1.25
Sponsor: Electrical Standards Board

American Standards Approved

Outlet Receptacles, Attachment Plug Caps, and Appliance Plugs, C73.1-1957 (Revision of C73-1941 and C73a-1953)
Sponsor: National Electrical Manufacturers Association
400-Watt BT-37 Fluorescent Mercury Vapor Lamp, Dimensional and Electrical Characteristics of, C78.1304-1957
400-Watt BT-37 Mercury Vapor Lamp, Dimensional and Electrical Characteristics of, C78.1305-1957
Sponsor: Electrical Standards Board

In Board of Review

Grounding and Bonding Equipment, Safety Standard for, C33.8-
Sponsor: Underwriters' Laboratories

In Standards Board

Weather-Resistant Wire and Cable, Polyethylene Type, Specifications for, C8.35-
Sponsor: Electrical Standards Board
Wet-Process Porcelain Insulators (Apparatus-Cap and Pin Type), EEI TDJ-58; NEMA 146-1956; ASA C29.8-
Wet-Process Porcelain Insulators (Apparatus-Post Type), EEI TDJ-59; NEMA 147-1956; ASA C29.9-
Sponsor: Electrical Standards Board
72-Inch T-8 Instant-Start Single-Pin Hot-Cathode Fluorescent Lamp, Dimensional and Electrical Characteristics of, C78.805- (Revision of C78.805-1951)
25-Millimeter 93-Inch Cold-Cathode Fluorescent Lamp, Dimensional and Electrical Characteristics of, C78.1104- (Revision of C78.1104-1951)
25-Millimeter 69-Inch Cold-Cathode Fluorescent Lamp, Dimensional and Electrical Characteristics of, C78.1106-
25-Millimeter 45-Inch Cold-Cathode Fluorescent Lamp, Dimensional and Electrical Characteristics of, C78.1107-
Sponsor: Electrical Standards Board

Reaffirmation Approved

Electricity Meters, Code for, C12-1941, including Supplement, C12a-1947, R1957
Sponsors: Electric Light and Power Group; National Bureau of Standards

GAS-BURNING APPLIANCES

In Standards Board

Addenda (Z21.1.1a) to American Standard Approval Requirements for Domestic Gas Ranges, Volume I, Free Standing Units, Z21.1.1-1956
Addenda (Z21.1.2a) to American Standard Approval Requirements for Domestic Gas Ranges, Volume II, Built-In Domestic Cooking Units, Z21.1.2-1956
Addenda (Z21.3a) to American Standard Approval Requirements for Hotel and Restaurant Gas Ranges and Unit Broilers, Z21.3-1956
Addenda (Z21.5a) to American Standard Approval Requirements for Domestic Gas Clothes Dryers, Z21.5-1956
Addenda (Z21.10.1a) to American Standard Approval Requirements for Gas Water Heaters, Volume I, Z21.10.1-1956
Addenda (Z21.10.2a) to American Standard Approval Requirements for Gas Water Heaters, Volume II, Side-Arm Type Water Heaters, Z21.10.2-1956
Addenda (Z21.11a) to American Standard Approval Requirements for Gas-Fired Room Heaters, Z21.11-1956
Addenda (Z21.13.1a) to American Standard Approval Requirements for Central Heating Gas Appliances, Volume I, Steam and Hot Water Boilers, Z21.13.1-1956
Addenda (Z21.13.2a) to American Standard Approval Requirements for Central Heating Gas Appliances, Volume II, Gravity and Forced Air Central Furnaces, Z21.13.2-1956
Addenda (Z21.13.3a) to American Standard Approval Requirements for Central Heating Gas Appliances, Volume III, Gravity and Fan Type Floor Furnaces, Z21.13.3-1956
Addenda (Z21.13.4b) to American Standard Approval Requirements for Central Heating Gas Appliances, Volume IV, Gravity and Fan Type Vented Recessed Heaters, Z21.13.4-1955 and Addenda Z21.13.4a-1956
Gas Unit Heaters, Approval Requirements for, Z21.16- (Revision of Z21.16-1956)
Addenda (Z21.27b) to American Standard Approval Requirements for Hotel and Restaurant Deep Fat Fryers, Z21.27-1955 and Addenda Z21.27a-1956
Addenda (Z21.28a) to American Standard Approval Requirements for Portable Gas Baking and Roasting Ovens, Z21.28-1956
Addenda (Z21.31a) to American Standard Approval Requirements for Gas Counter Appliances, Z21.31-1956
Addenda (Z21.34b) to American Standard Approval Requirements for Gas-Fired Duct Furnaces, Z21.34-1955 and Addenda Z21.34a-1956
Installation of Gas Conversion Burners in Domestic Ranges, Listing Requirements for, Z21.38- and Addenda Z21.38a- (Revision of Z21.38-1953 and Z21.38a-1955)
Gas Conversion Burners for Domestic Ranges, Listing Requirements for, Z21.39- and Z21.39a- (Revision of Z21.39-1953 and Z21.39a-1955)
Sponsor: American Gas Association

Reaffirmation Being Considered

Gas Hose for Portable Gas Appliances, Listing Requirements on, Z21.2-1949, R1952
Hot Plates and Laundry Stoves, Approval Requirements for, Z21.9-1948, and Addenda Z21.9a-1949, R1952
Automatic Valves for Gas Appliances, Listing Requirements for, Z21.21-1952
Dual Oven Type Combination Gas Ranges, Approval Requirements for, Z21.37-1948, R1952
Sponsor: American Gas Association

MATERIALS AND TESTING

American Standard Published

Alloy Designation System for Wrought Aluminum, H35.1-1957 $0.25
Sponsor: Aluminum Association

In Board of Review

Felted and Woven Fabrics Saturated with Bituminous Substances for Use in Waterproofing and Roofing, Methods of Sampling and Testing, ASTM D 146-56; ASA A109.10- (Revision of ASTM D 146-47; ASA A109.10-1955)

Disintegration of Fireclay Refractories in an Atmosphere of Carbon Monoxide, Method of Test for, ASTM C 288-56; ASA A111.35- (Revision of ASTM C 288-54; ASA A111.35-1955)

Chemical Analysis of White Pigments, Methods of, ASTM D 34-56T; ASA K15.1- (Revision of ASTM D 34-51T; ASA K15.1-1956)
Sponsor: American Society for Testing Materials

MECHANICAL

In Board of Review

Transmission Roller Chains and Sprocket Teeth, B29.1- (Revision of B29.1-1950) Inverted Tooth (Silent) Chains and Sprocket Teeth, B29-2- (Revision of B29.2-1950)
Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

Five-Quart and One-Gallon Round Motor Oil Cans, Requirements for, B64.2- (Revision of B64.2-1954)

In Standards Board

Abrasive Discs and Plate Mounted Wheels, Machine Mounting Specifications for, B5.35-

Carbide Blanks and Cutting Tools, B5.36-
Sponsors: American Society of Mechanical Engineers; National Machine Tool Builders' Association; Society of Automotive Engineers; Metal Cutting Tool Institute; American Society of Tool Engineers

Compressed Gas Cylinder Valve Outlet and Inlet Connections, B57.1- (Revision of B57.1-1953)
Sponsor: Compressed Gas Association

American Standard Withdrawn

Surface Roughness and Lay, Physical Specimens of, B46.2-1952
Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers
Note: This standard is obsolete. American Standard B46.1-1955 now contains this material.

MINING

Withdrawal Being Considered

Fire Fighting Equipment in Metal Mines, M17-1930
Sponsors: American Mining Congress; National Fire Protection Association

Mechanical Loading Underground in Metal Mining, Recommended Practice for, M19-1928
Sponsor: American Mining Congress

NUCLEAR ENERGY

American Standard Approved

Glossary of Terms in Nuclear Science and Technology, N1.1-1957

PHOTOGRAPHY

American Standards Published

Photographic Grade Mono-Methyl-Para-Aminophenol Sulphate, Specification for, PH4.125-1956 $0.35

Photographic Grade Para-Phenylenediamine, Specification for, PH4.132-1956 $0.35

Photographic Grade Para-Phenylenediamine Dihydrochloride, Specification for, PH4.133-1956 $0.35

Photographic Grade Chlorohydroquinone, Specification for, PH4.134-1956 $0.35

Photographic Grade 6-Nitrobenzimidazole Nitrate, Specification for, PH4.206-1956 $0.25
Sponsor: Photographic Standards Board

American Standards Approved

Projected Image Area of 16mm Motion-Picture Film, PH22.8-1957 (Revision of Z22.8-1950)

Projected Image Area of 8mm Motion-Picture Film, PH22.20-1957 (Revision of Z22.20-1950)

16-Tooth 35mm Motion-Picture Projector Sprockets, PH22.35-1957 (Revision of Z22.35-1947)

Photographic Sound Record on 16mm Prints, PH22.41-1957 (Revision of Z22.41-1946)
Sponsor: Society of Motion Picture and Television Engineers

In Board of Review

Paper Sheets for Photo-Reproduction of Documents, Dimensions of, PH5.2-

Practice for Storage of Microfilm, PH5.4-
Sponsor: American Library Association

Reaffirmation Being Considered

Zero Point for Focusing Scales on 16mm and 8mm Motion-Picture Cameras, PH22.74-1951
Sponsor: Society of Motion Picture and Television Engineers

Withdrawal Being Considered

Theater Projection Screens, Dimensions for, Z22.29-1948

Mounting Frames for Theater Projection Screens, Dimensions for, Z22.78-1950
Sponsor: Society of Motion Picture and Television Engineers

WHAT'S NEW ON AMERICAN STANDARDS PROJECTS

Aerial Passenger Tramways, B77—

Sponsors: American Society of Mechanical Engineers; Eastern Ski Area Operators Association

Requirements to assure safety in the construction, location, and maintenance of uphill transportation equipment used in connection with skiing in winter and mountain sightseeing in summer will be developed by this recently organized sectional committee. The equipment to be covered by the committee's work includes aerial cable cars, skimobiles (and similar tramways), chair lifts, T-bar lifts, J-bar lifts, platter lifts, and similar devices, as well as fiber rope tows. It does not, however, include cog railways, funicular railways, cable cars running on rails, and materials handling equipment.

Chairman of the committee is Philip Robertson, president of the Eastern Ski Area Operators Association, and general manager, Cranmore Skimobiles, Incorporated, North Conway, New Hampshire. Secretary is Frank G. Sterritte, counselor-at-law in New York City, a representative for Mt Mansfield Company, Inc, Stowe, Vermont.

Mr Robertson has been general manager of Cranmore Skimobiles since 1938, but has been interested in promotion of skiing since 1933. He is also active in other sports, in Canada as well as in the USA. He is president of the Miramichi-Renous Club of New Brunswick, Canada, a director of the Miramichi Salmon Association, also of New Brunswick, and a member of the Fly Casters Club of Boston.

Philip Robertson

Mr Sterritte is General Counsel for the Mt Mansfield Company of Stowe,

Vermont which operates all the ski lifts at Stowe. He is also counsel for the Eastern Ski Area Operators Association. For some 12 years he has been General Counsel and Secretary

Frank G. Sterrite

for the American International Underwriters Corporation of New York. He is a member of a number of local and state law groups and also holds membership in the International Bar Association and the American Foreign Law Association.

Terminology in the Field of Automatic Controls, C85—

Sponsor: The American Society of Mechanical Engineers

Prepared by G. W. Heumann, Secretary

Increased use of automatic controls in manufacturing industries, in process industries, and in business administration has emphasized the need for a common language for this field of engineering effort. Hence, this project has been set up under the procedures of the American Standards Association to establish standard terms pertaining to automatic control, and to develop definitions of such terms.

Scope of the project is: "Terminology pertaining to systems such as automatic process control, feedback control, regulating and other related systems not requiring human intervention as part of the regulating procedure."

Committee officers are: *Chairman:* M. A. Princi, General Electric Company, Lynn, Mass.; *Secretary:* G. W. Heumann, General Electric Company, Schenectady, N. Y.

The document which Committee C85 is developing is to be a dictionary of terms and definitions. In this work, a close relationship is being maintained with Sectional Committee Y10 Letter Symbols, also under ASA procedures, which has been assigned the responsibility for letter symbols and graphical representations as used in automatic control systems.

A review of source material published in the United States has brought to light over 100 items including published standards, draft standards, papers, and articles dealing with terminology for automatic control systems. Among these sources are: "Automatic Control Terminology" published 1954 by The American Society of Mechanical Engineers; "Letter Symbols for Feedback Control Systems," Y10.14 tentative draft prepared by Sectional Committee Y10, published 1955; "IRE Standards on Terminology for Feedback Control Systems, 1955, published by the Institute of Radio Engineers; "Accuracy and Sensitivity Terminology as Applied to Industrial Instruments," tentative standard, published 1955 by The Scientific Apparatus Makers Association; "Proposed Symbols and Terms for Feedback Control Systems," published 1952 by American Institute of Electrical Engineers, Feedback Control Committee.

In other countries, standards on automatic control terminology have been issued by Great Britain, The Netherlands, and Western Germany. A Technical Committee of the International Electrotechnical Commission is working on a glossary of automatic control terms, but no published document is available as yet.

As an initial step in organizing its work, C85 has set up several subcommittees, each being assigned a certain work area to be covered in the initial document which C85 plans to publish. The subcommittees and their work areas are:

Subcommittee 1, Types and Components: Chairman, H. A. Miller, Raytheon Manufacturing Company, Waltham, Mass. The committee is working on definitions to describe the basic types of automatic control systems and the various component elements of each system.

Subcommittee 2, Signals: Chairman, D. H. Smith, Bell Telephone Laboratories, New York. This committee is defining the signals and process variables which are present in a generalized feedback control system.

Subcommittee 3, Modes and Parameters: Chairman, W. I. Caldwell, Taylor Instrument Companies, Rochester, N. Y. This committee is working on terms describing automatic control action, and the fixed or adjustable parameters which influence control action.

Subcommittee 4, Behavior and Presentation: Chairman, Dr H. L. Mason, National Bureau of Standards, Washington, D. C. This committee defines terms describing in detail the responses of automatic control systems, and their generalized controlled elements.

A Coordinating Committee under the chairmanship of O. W. Livingston, General Electric Company, Waynesboro, Virginia, has been established to resolve questions of concept, procedure, and style as they affect all subcommittees. It will also serve as an editorial committee to draft the tentative standard which will contain the definitions developed by the subcommittees.

A number of meetings of the main committee and of the subcommittees have been held, and some 200 terms have been defined tentatively. It is anticipated that these definitions will be distributed for comment in the near future.

The initial phase of the work of Committee C85 will probably be completed during the current year. It is expected that C85 will then proceed to cover additional work areas and go more deeply into the fields of specific control systems.

Chemical Reagents—

Recently submitted to ASA for approval as American Standard is the 428-page set of reagent standards

developed by the American Chemical Society and published by the Society in book form under the title "Chemical Reagents." The 1955 edition of this work pools the experience of many laboratories and balances points of view of producers and users over a period of 35 years, the Society announces. This is a tool for basic scientific work. The Society established a Committee on Purity of Chemical Reagents in 1903 to raise the standards of quality and reliability of reagent chemicals and discourage erroneous labeling. It published its first specifications in 1921. First edition of the present work was published in 1950, followed by an Appendix in 1953. Presentation of "Chemical Reagents" to ASA for approval is first requested by ACS for recognition of one of the Society's standards as American Standard.

Common Names for Pest Control Chemistry, K62—

Sponsor: U. S. Department of Agriculture

Beginning May 1, 1957 a service is being given by the American Standards Association to manufacturers, formulators, and other organizations interested in pest control chemicals. The service concerns national recognition and acceptance of easily-remembered coined or common names to replace long and complicated chemical names in technical and sales literature and on labels. As defined by Committee K62, a pest control chemical is a chemical having potential use in pesticides, including insecticides, fungicides, rodenticides, herbicides and nematocides, and also defoliants and plant regulators. A common name is the coined name which applies to the 100 percent pure pest control chemical and which is available for unrestricted use.

Those seeking acceptance of a common name are expected to comply with the rules established in American Standard Procedure for the Acceptance of an American Standard Common Name for a Pest Control Chemical, K62.1-1956.

An application fee of three hundred dollars ($300) must accompany the "statement" prepared and submitted by the "sponsor" for each common name. It is not refundable and is charged to defray the expense of the secretarial and technical services required by Committee K62 in its consideration of each application. For a trial period of one year, beginning May 1, 1957, these services will be provided by the ASA staff augmented by such specialized personnel as may be required. In accepting the fee, neither ASA nor Committee K62 guarantees acceptance as an American Standard Common Name—merely that a "statement" prepared in the form and detail prescribed in American Standard K62.1-1956 will be placed before Committee K62 for appropriate action pursuant to Section 5, Procedure.

For each common name approved as an American Standard Common Name by ASA, a standard will be published announcing for general use the common name for the specified 100 percent pure pest control chemical. Included but not a part of the standard is information furnished by the sponsor pertaining to the physical and chemical properties of the chemical and its proposed uses.

Applications and the fee payable to the American Standards Association should be sent to:

Secretary, ASA Sectional Committee K62
American Standards Association, Incorporated
70 East 45th Street
New York 17, N. Y.

ASA Committee K62 was organized in 1954 upon recommendation made by the U. S. Department of Agriculture that ASA procedures be utilized by industry and technology to replace the service previously rendered by the Interdepartmental Committee on Pest Control in cooperation with other interested organizations.

The procedure to be followed by "sponsors" of proposed common names was developed by this committee, on which the following national organizations are officially represented:

American Chemical Society
American Medical Association
American Phytopathological Society
American Society for Horticultural Science
American Society of Plant Physiologists
Association of American Pesticide Control Officials
Chemical Specialties Manufacturers Association, Inc
Entomological Society of America
Interdepartmental Committee on Pest Control
National Agricultural Chemicals Association*
U. S. Trade Mark Association
Weed Society of America

The Canadian Standards Association holds a liaison membership to ensure close coordination with similar work going on in Canada.

ASA Committee K62 also serves as the advisory body to ASA in the work of Technical Committee 81 on Common Names for Pest Control Chemicals of the International Organization for Standardization (ISO).

Wood Poles, O5—

Sponsor: Telephone Group

In an article on "Wood Poles for Communication Lines" published in the May 1957 issue of the *ASTM Bulletin*, George Q. Lumsden, chairman of Committee O5, declares that the committee is planning to review the ultimate fiber stress value for all species of wood poles contained in the present American Standard O5.1-1948. This review will take place after the research program on poles being carried out by the American Society for Testing Materials is completed. The ASTM program is the first all-embracing study made on the five most important pole species in use in the United States—southern pine, western red cedar, Douglas fir, lodgepole pine, and western larch. The results of the program are expected to provide a better understanding of the relative strength of

*In accepting membership on Committee K62, the National Agricultural Chemicals Association limits its participation to matters of policy and procedure, taking no part in the decisions as to the acceptability of recommendation on approval of a common name.

the pole species as well as to furnish a more rational basis for safe pole line design, Mr Lumsden explains. If reconsideration of the fiber stress ratings indicates a need for it, the American Standard O5.1-1948 will be revised and recommendations made to the committee on the National Electrical Safety Code.

Mr Lumsden's article points out that from 200 to 250 million wood poles have been produced in the U. S. since Samuel F. B. Morse ordered "700 straight and sound chestnut posts" in 1844, for the first pole line. He analyzes the good qualities that have made wood poles stand up for more than 100 years against all competition, and points to ways in which wood poles can now be improved.

Photographic Reproduction of Documents, PH5—

The American Library Association has accepted sponsorship for this committee, replacing the Council of National Library Associations. ALA reports that the Committee on Copying Methods, under ALA's Resources and Technical Services Division, will have responsibility for the work.

Donald C. Holmes, Chief, Photoduplication Service, Library of Congress, is chairman of Sectional Committee PH5. Wade S. Nivison, Recordak Corporation, is vice-chairman; and Hubbard Ballou, Columbia University Library, is secretary.

Abbreviations, Y1—

Sponsor: American Society of Mechanical Engineers

Action has just been taken by the Graphic Standards Board to change the scope of this committee to cover only abbreviations for the physical sciences and engineering rather than abbreviations in general. Standards already approved and now under the jurisdiction of this committee include the American Standard Abbreviations for Scientific and Engineering Terms, Z10.1-1941, and the American Standard Abbreviations for Use on Drawings, Z32.13-1950. A new edition of American Standard Z10.1-1941 is nearing completion.

Standards Outlook

by LEO B. MOORE

Mr Moore is Associate Professor of Industrial Management, Massachusetts Institute of Technology, where he teaches a full-term course in industrial standardization.

The 'Not-Invented-Here' Problem

Personal pride in the job is a deep and underlying motivation for every man, and helping to see him through the tiresome repetitions of the day. This pride is one of the mainstays of the standards engineer and largely counteracts the disappointments and difficulties of his work. However, common sense dictates that sometimes he lean on others and on the job they do, rather than prove that he has equal ability in all things. In the field of standardization, this raises some problems that may be identified as having "not invented here" aspects. This is true not only for the man who formulates the standard, but for the man who is expected to use it as well.

A basic concept of standardization is togetherness in the sense that the more "joining and accepting" there is, the more effective the standard will be. Every company represents a part of the total picture of its industry and its industry's economic contribution. Important to every company are the many standards that are available externally and that are in some fashion appropriate to its operations. Typically, however, these standards never seem to fit, and too often need rework to be acceptable to the company standards group. The explanation given is: "These external standards are too general or too all-embracing. Our company situation is different and unique and its needs are specific. We must have our own standards to suit our own conditions."

Is this pride of workmanship or is this self-defeating? Would the users of standards have a greater sense of value if they could see how each company fits with the many others that make up our economic effort? Would it be better to indicate where and how a higher standard was adapted for the company's use or influenced its decision?

In this respect, then, internal standards for company use may face the same problem of "not invented here." Such standards may be assumed by the standards department to be suitable because certain processes of investigation, fact-gathering, group discussion, and approval by consensus were followed. The subsequent publication and insertion in a manual may tend to provide an air of acceptance, but from the recipient's point of view they may not jibe with his needs. His operation may be different and his needs explicit, and while in his opinion the standards for the company may be generally adequate, they may not be specifically considerate of his personal area. He may well seek to express his personal pride and workmanship through non-use of the standard.

Teachers find that students, especially college students, must learn to appreciate the value of a library as a storehouse of knowledge. They know that students would much rather reinvent the knowledge, so teachers guide the students by leaning heavily and deliberately on the library. Perhaps standards formulators might lead the way similarly for standards users, by leaning heavily and pointedly on their total resources, taking pride in the acceptance of standards that now exist, and showing how that portion which the company uses fits the whole.

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